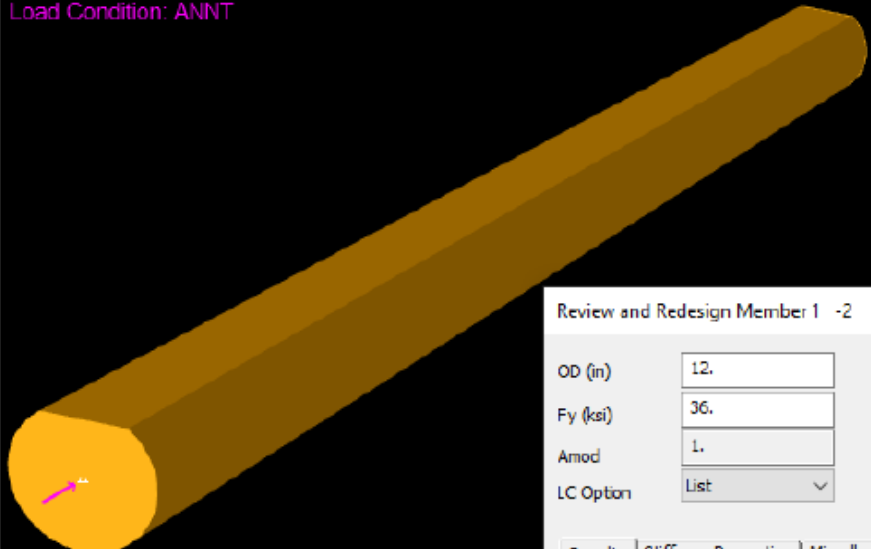




SACS CONNECT Edition V 15.1 SES

API LRFD 2nd Edition 规范校核

Load Condition: ANNT



Review and Redesign Member 1 -2

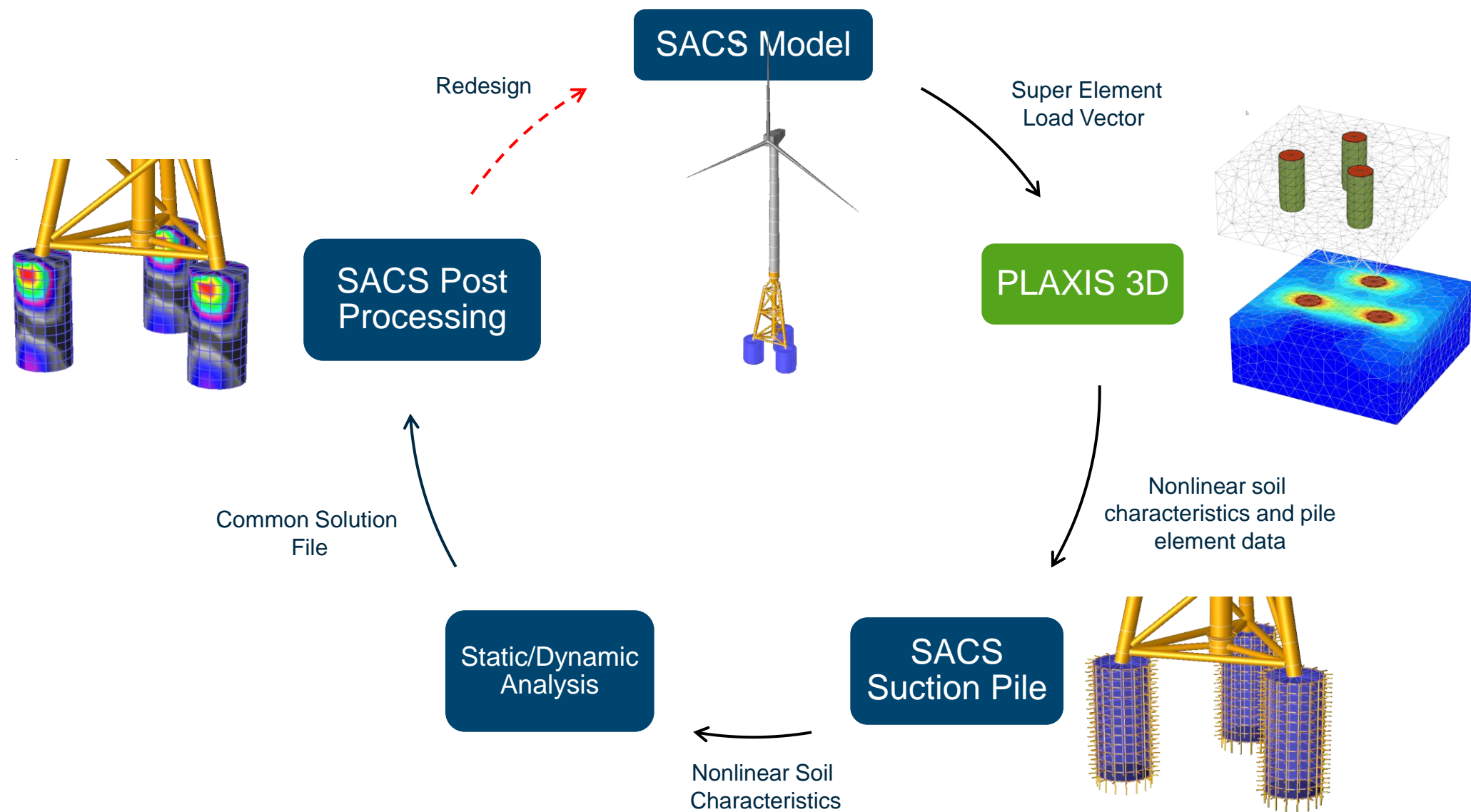
OD (in) 12. WT (in) 0.25 Ky (Grup) 1.
Fy (ksi) 36. Loc (ft) 8. Kz (Grup) 1.
Amod 1. Segment 1 ☐ Set
LC Option List Critical LC ANNT Crr 0.85

Results | Stiffness Properties | Miscellaneous Information

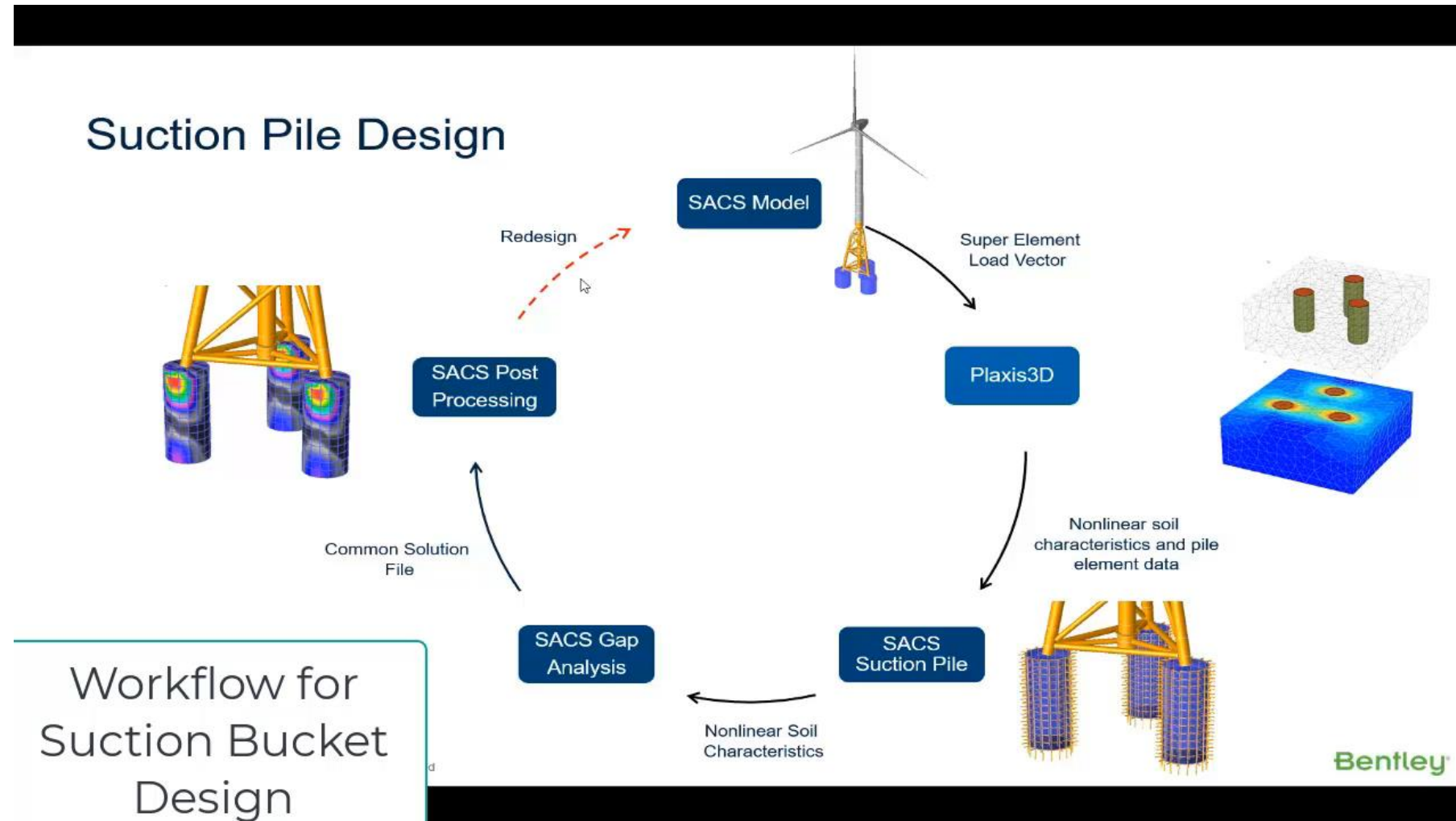
Group		Stress	Actual	Allowable	Ratio
Euler	DEN		-14.92	0.00	0.00
Fa	Len (ft)		-14.92	20.59	0.53
-Fby	Type		22.98	34.23	0.51
-Fbz	Code		-18.08	43.51	0.26
Fvy	Max UC Ratio		2.11	19.80	0.08
Fvz	ACBI		0.00	19.80	0.00
	Lam y				
	Cmy				
	Lam z				
	Cmz				

Moment Diagram Detailed Report Recalculate Report OK Close

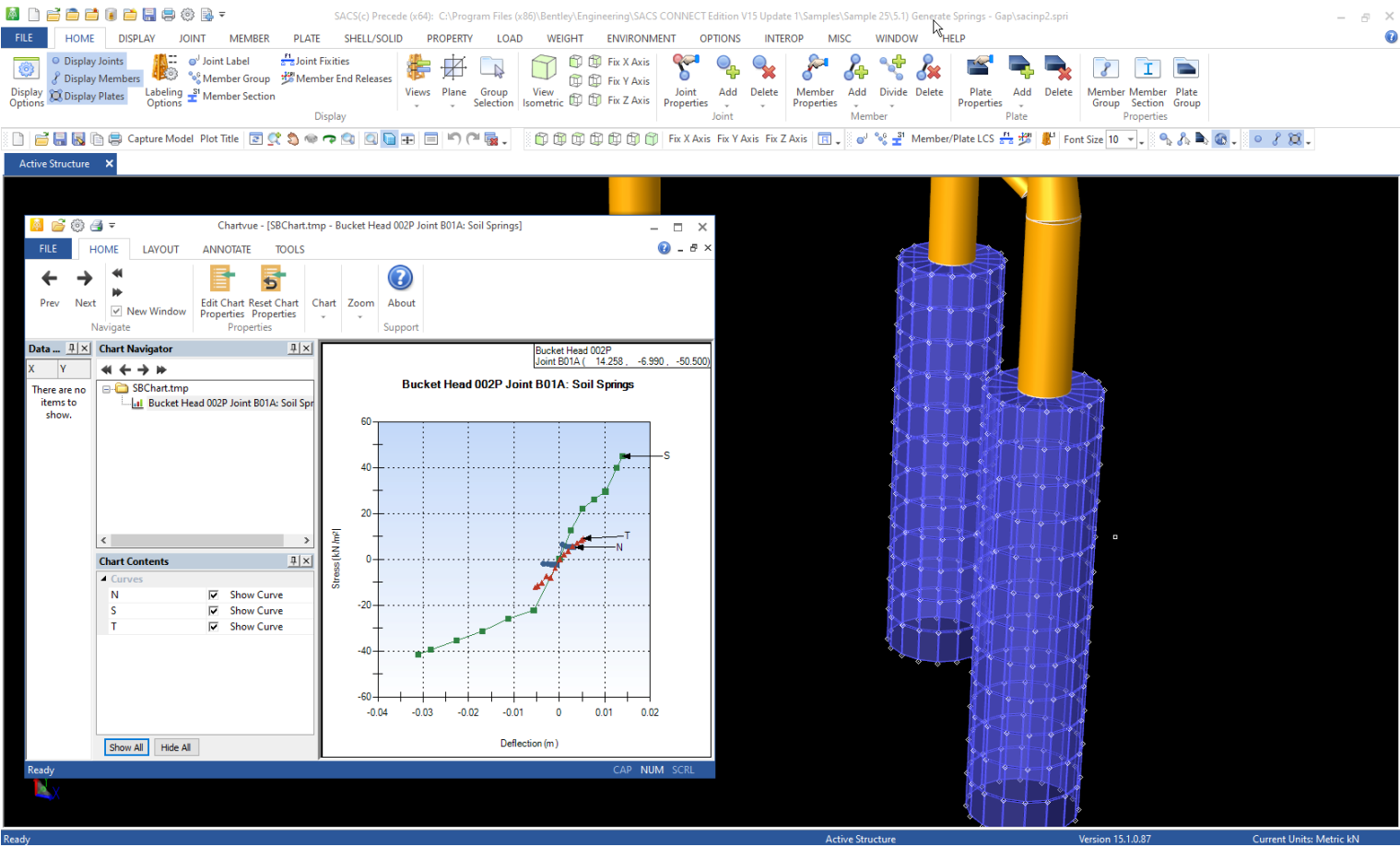
SACS 吸力筒设计模块



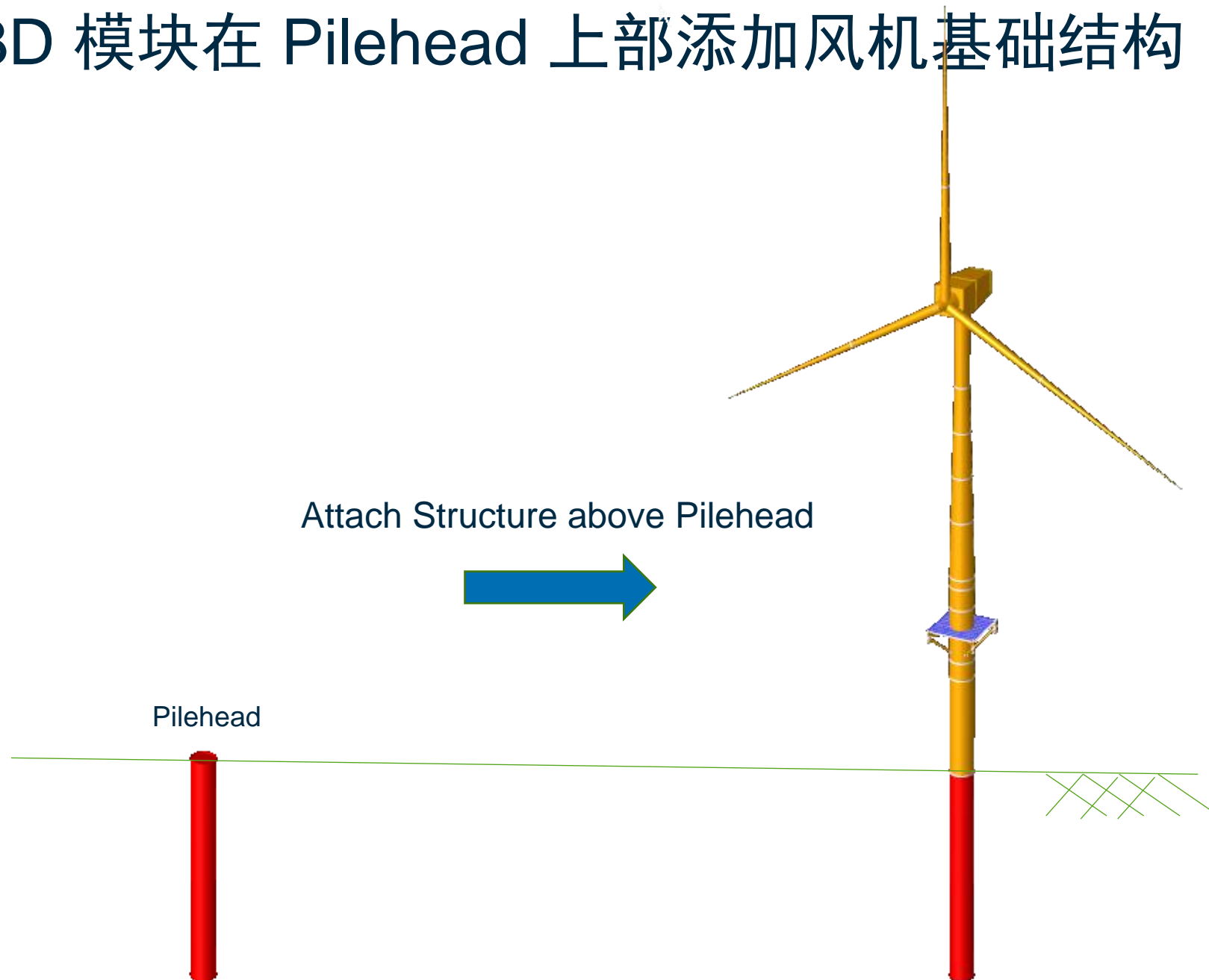
吸力筒设计



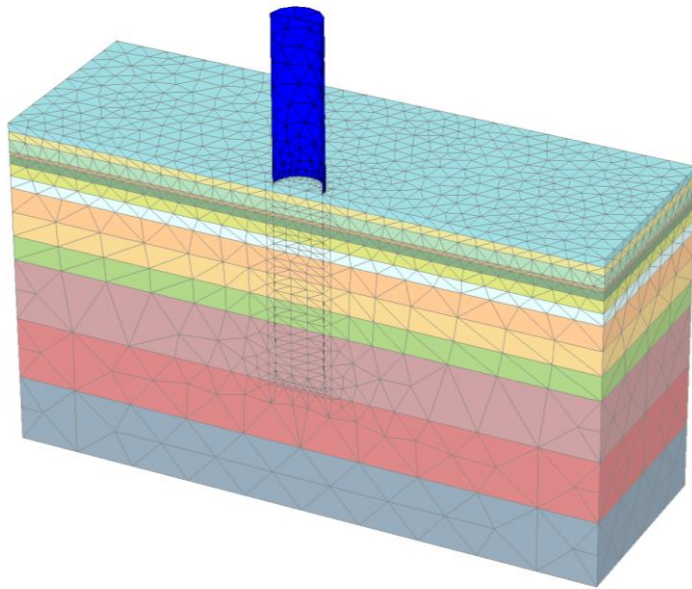
在Precede 中图形化显示吸力筒非线性支撑单元



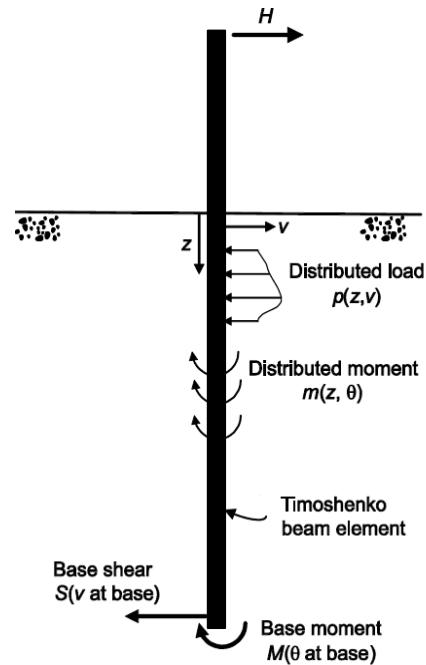
Pile3D 模块在 Pilehead 上部添加风机基础结构



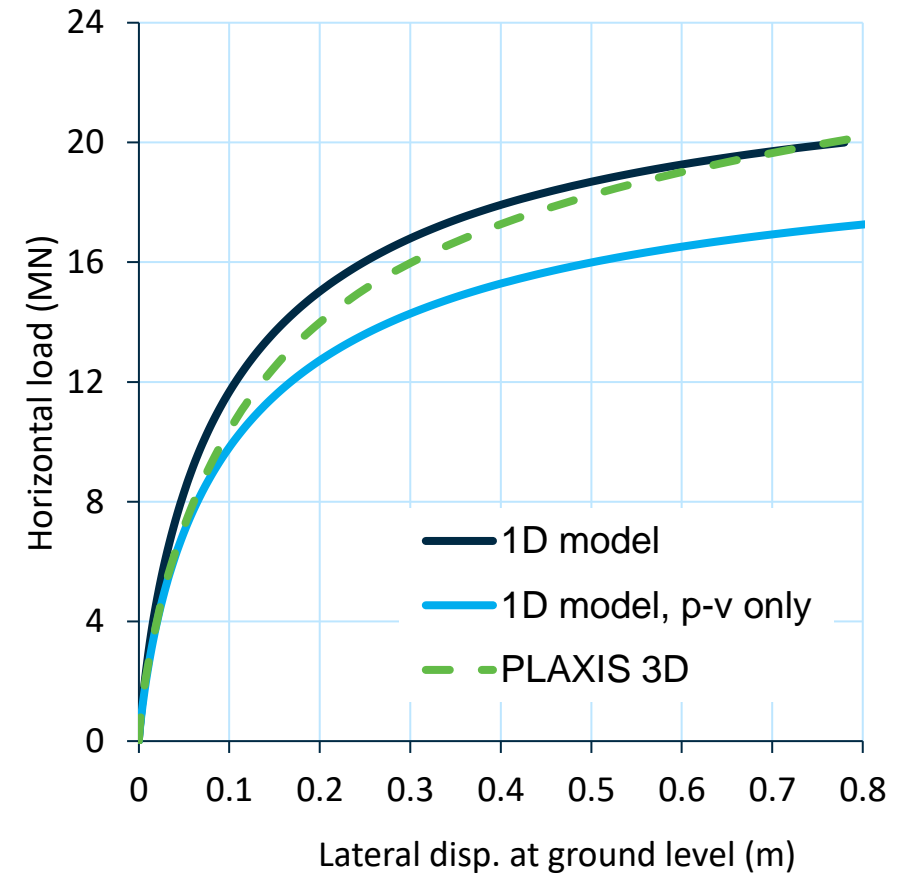
与Plaxis Monopile design 集成的大直径单桩设计



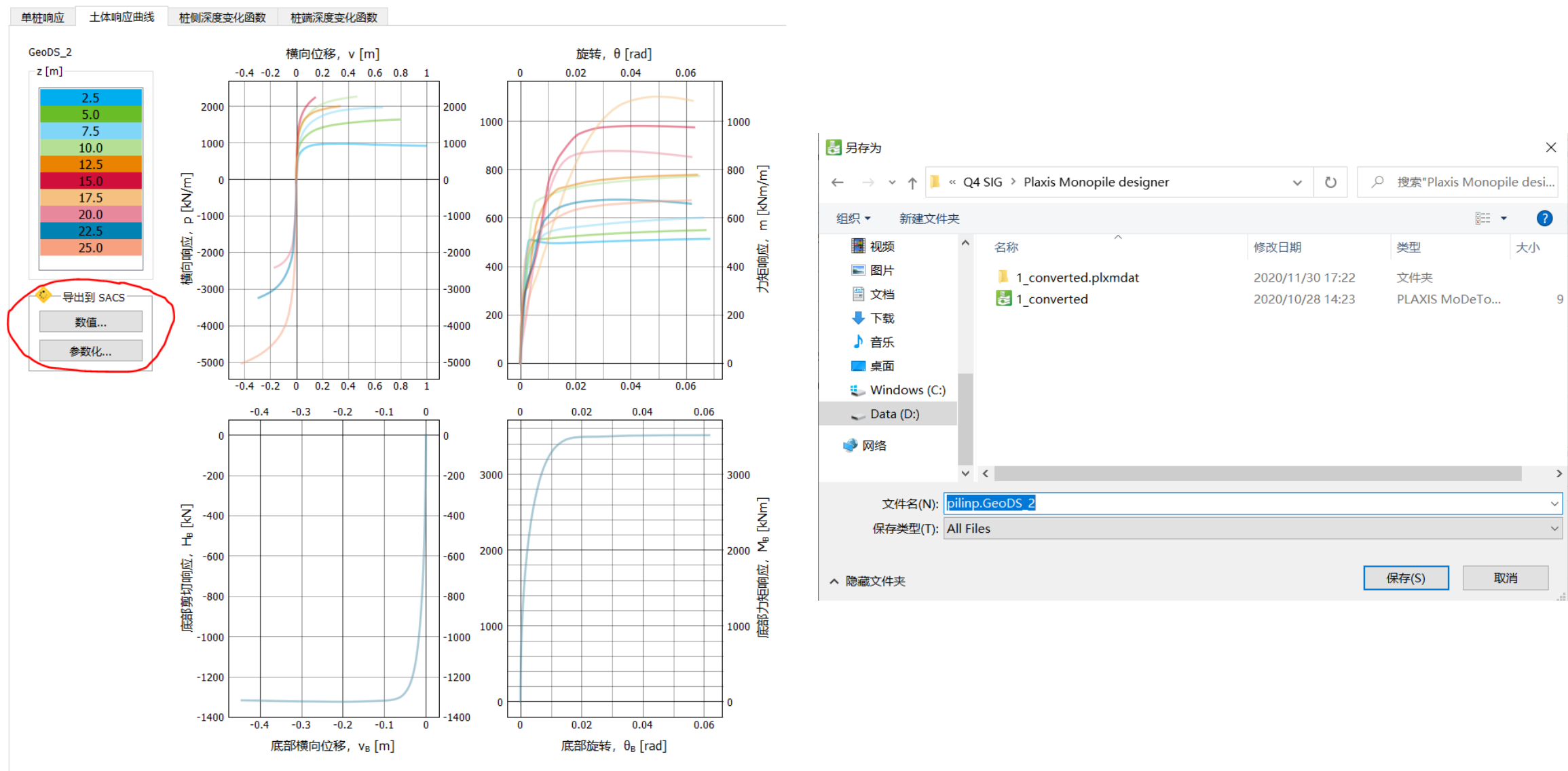
~ 10.000 elements
~ hours



~ 100 elements
~ seconds



从Plaxis导出SACS格式的桩土交互结果



SACS桩土文件

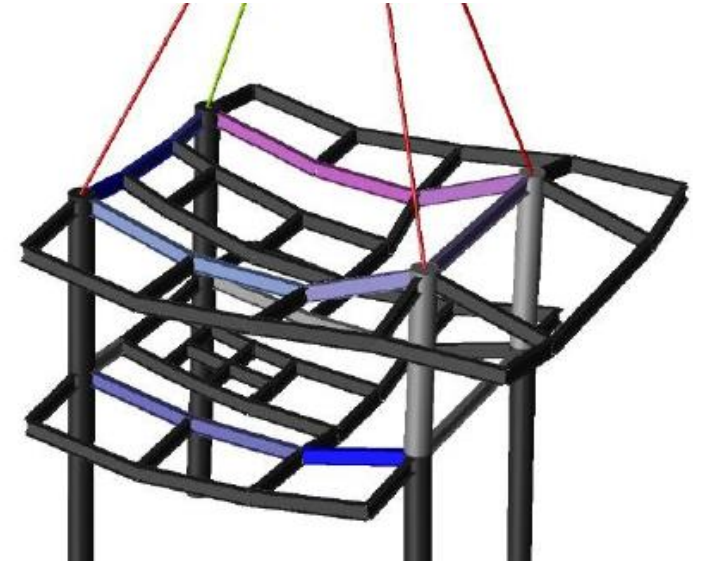
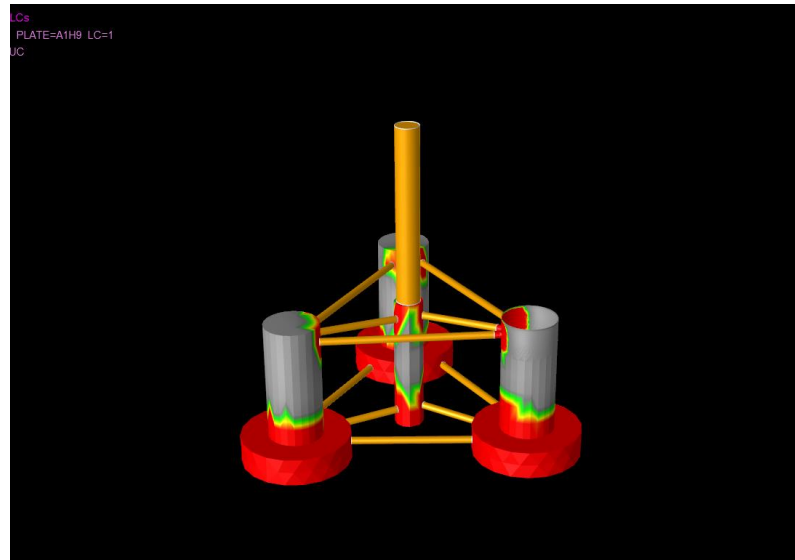
pilnp.GeoDS_2									
1	PLOFT	MNUC	100	999		PT		S3	S
2	PLGRUP								
3	PLGRUP	PIL		500.005.000021.0008.0769	36.0	25.000			0.7775
4	PILE								
5	PILE	0001	PIL					SOL1	
6	SOIL								
7	SOIL	TZAPI	HEAD8		1.0	1.0	SOL1		
8	SOIL	API	AXL	SLOC	0.0	CLAY5.0E-3			0.7645
9	SOIL	API	AXL	SLOC	9.999010.000	CLAY7.0E-3			0.7645
10	SOIL	API	AXL	SLOC	10.000	CLAY8.0E-3			0.8154
11	SOIL	API	AXL	SLOC	24.99925.000	CLAY9.5E-3			0.8154
12	SOIL	API	AXL	SLOC	25.000	CLAY0.0110			0.9174
13	SOIL	API	AXL	SLOC	39.99940.000	CLAY0.0115			0.9174
14	SOIL	API	AXL	SLOC	40.000	CLAY0.0120			1.0193
15	SOIL	API	AXL	SLOC	49.99950.000	CLAY0.0140			1.0193
16	SOIL	TORSION	HEAD				SOL1	N	
17	SOIL	LATERAL	HEAD025	20YEXP500.00			SOL1	YY	Y
18	SOIL	P-Y	SLOCSM	20	0.01.0000	1.0			1.0
19	SOIL	P-Y	P-Y	0.0	0.05.75501.63266.36843.26536.61894.89796.75536.5306				
20	SOIL	P-Y	P-Y	6.84118.16326.89999.79596.942611.4286.975013.0617.000414.693					
21	SOIL	P-Y	P-Y	7.037417.9597.062821.2247.081224.4897.095027.7557.113934.285					
22	SOIL	P-Y	P-Y	7.125840.8167.133647.3467.138653.8777.143866.9387.145280.000					
23	SOIL	P-Y	SLOCSM	20	1.00002.0000	1.0			1.0
24	SOIL	P-Y	P-Y	0.0	0.06.72891.63267.54103.26537.88134.89798.06926.5306				
25	SOIL	P-Y	P-Y	8.18818.16328.27029.79598.330011.4288.375513.0618.411214.693					
26	SOIL	P-Y	P-Y	8.463317.9598.499321.2248.525424.4898.544927.7558.571834.285					
27	SOIL	P-Y	P-Y	8.588740.8168.599747.3468.606953.8778.614466.9388.616380.000					

SOIL	ENDING	HEAD025	20		1.0		SOL1	500.00	
SOIL	M-T	SLOCSM	6		0.01.0000	1.0			C
SOIL	M-T	M-T	0.0		0.03.21703.2E-44.28944.3E-45.09695.4E-45.09696.4E-4				
SOIL	M-T	M-T	5.09695.3E-3						
SOIL	M-T	SLOCSM	19		1.00002.0000	1.0			C
SOIL	M-T	M-T	0.0		0.02.14682.1E-43.22023.2E-44.29364.3E-45.24005.4E-4				
SOIL	M-T	M-T	5.24006.4E-45.24007.5E-45.24008.6E-45.24001.1E-35.24001.2E-3						
SOIL	M-T	M-T	5.24001.9E-35.24002.1E-35.24002.6E-35.24002.7E-35.24003.1E-3						
SOIL	M-T	M-T	5.24003.3E-35.24003.8E-35.24003.9E-35.24005.3E-3						
SOIL	M-T	SLOCSM	16		2.00003.0000	1.0			C
SOIL	M-T	M-T	0.0		0.02.14272.1E-43.21413.2E-44.28544.3E-45.35685.4E-4				
SOIL	M-T	M-T	5.37886.4E-45.37887.5E-45.37888.6E-45.37881.1E-35.37881.2E-3						
SOIL	M-T	M-T	5.37881.7E-35.37881.8E-35.37881.9E-35.37884.6E-35.37884.7E-3						
SOIL	M-T	M-T	5.37885.3E-3						
SOIL	BASESHR	HEAD	20		1.0	1.0	SOL1		
SOIL	BH-V	SLOCSM	20						
SOIL	BH-V	BH-V	0.0		0.01179.32.77791286.35.55581326.78.33381347.911.111				
SOIL	BH-V	BH-V	1361.013.8891369.816.6671376.119.4451380.922.2231384.625.001						
SOIL	BH-V	BH-V	1389.930.5571393.636.1131396.341.6691398.247.2251400.958.336						
SOIL	BH-V	BH-V	1402.669.4481403.780.5601404.491.6721405.2113.891405.4136.11						
SOIL	BASEMOM	HEAD	20		1.0	1.0	SOL1		
SOIL	BM-T	SLOCSM	2						
SOIL	BM-T	BM-T	0.0		0.0	0.00.1814			

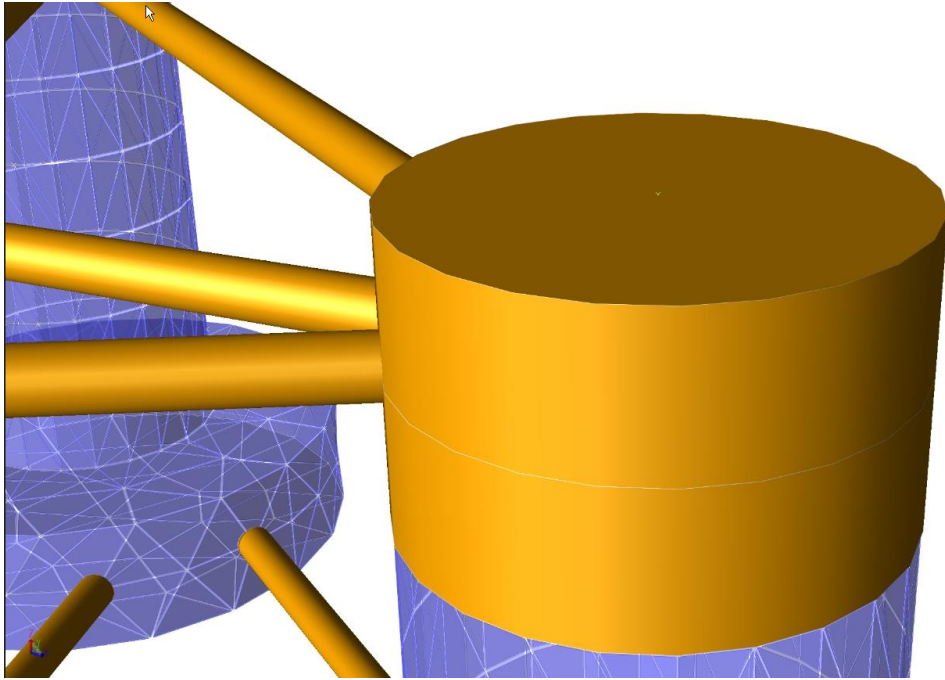
沿桩长方向分布的弯矩支撑

桩底弯矩和剪力支撑

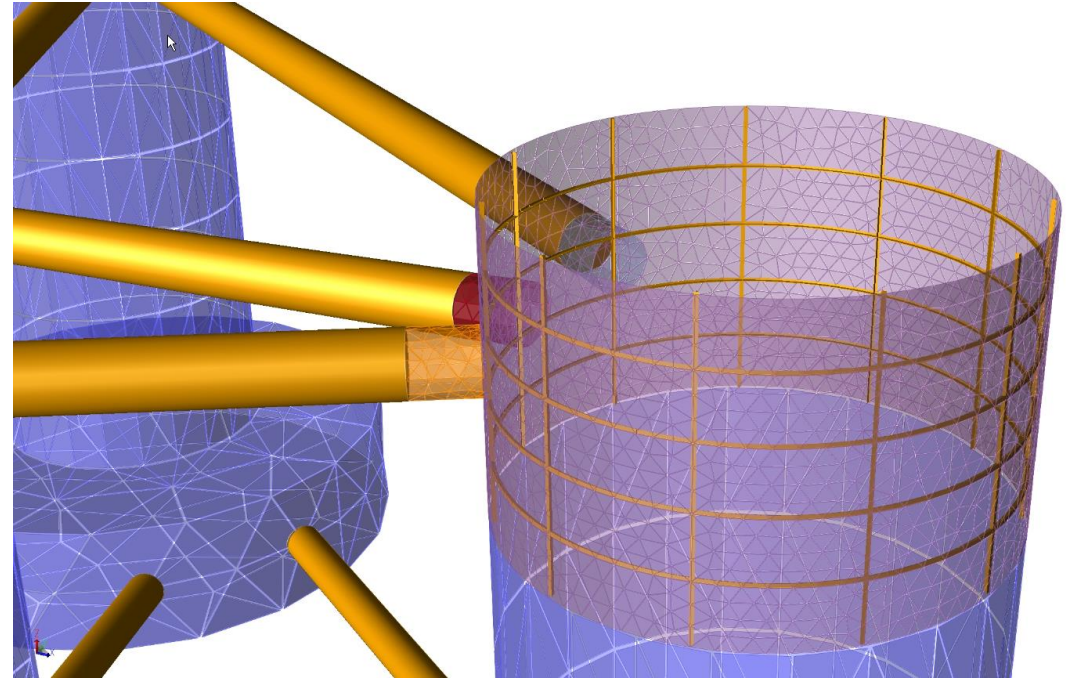
Advanced Solver (用于缺乏自由度约束的结构)



Joint Mesher中加筋单元显示



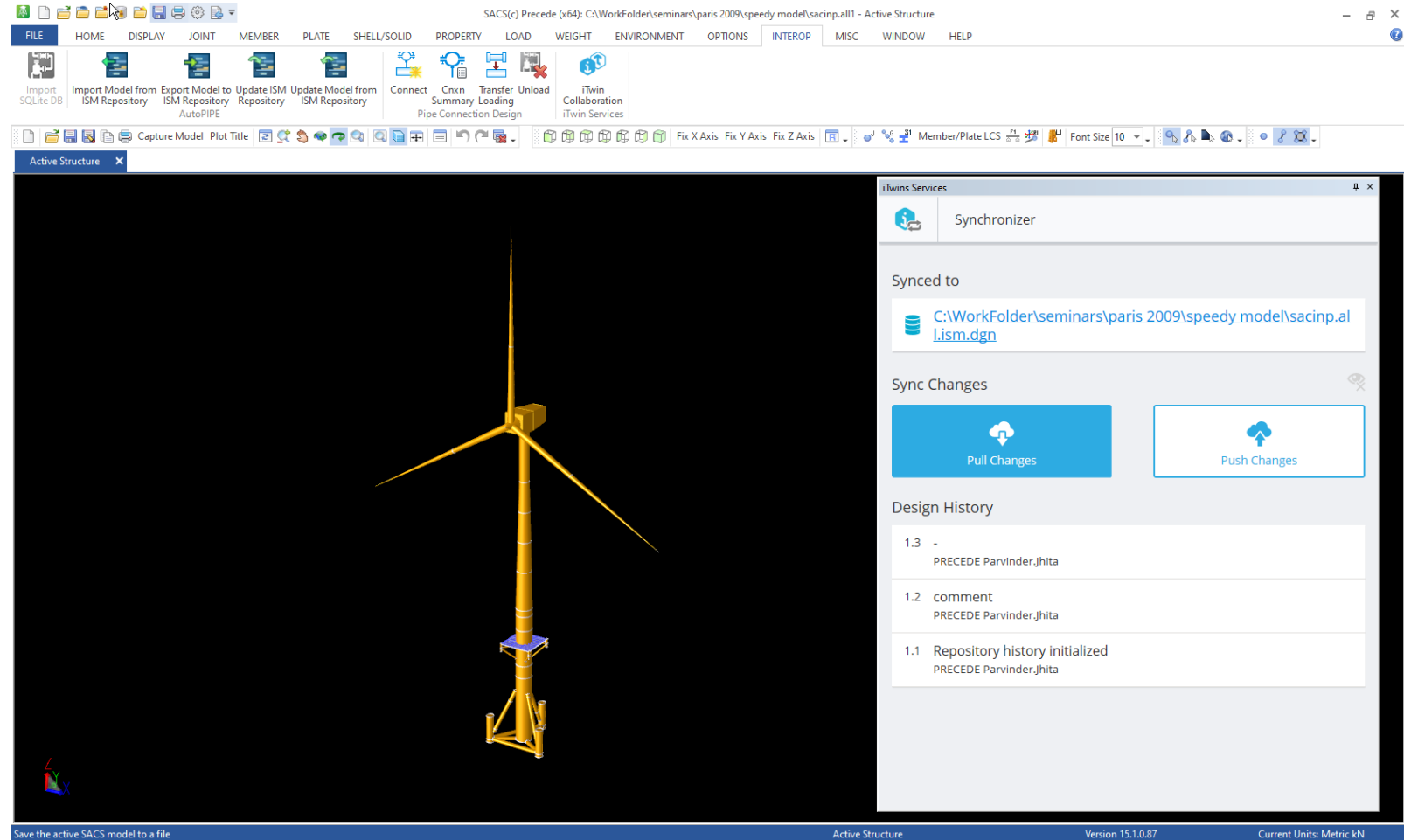
Before



After



SACS integration with Bentley's iTwin Hub



SACS 命令语言调用

Maximize Efficiency – Achieve 20% to 30% Reduction in Design Time

Run SACS from Script

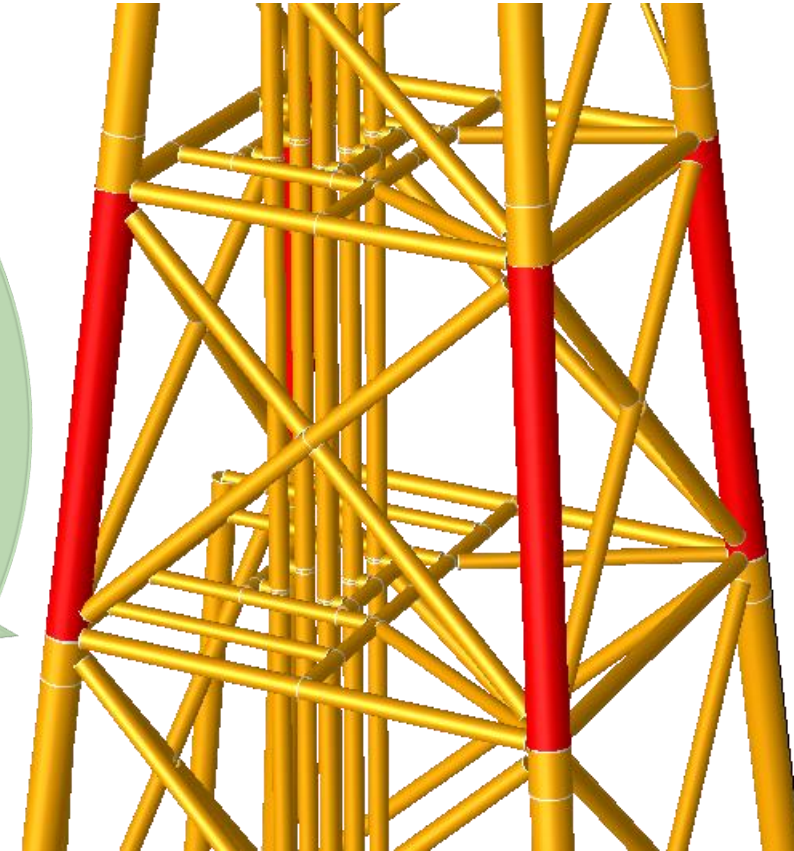
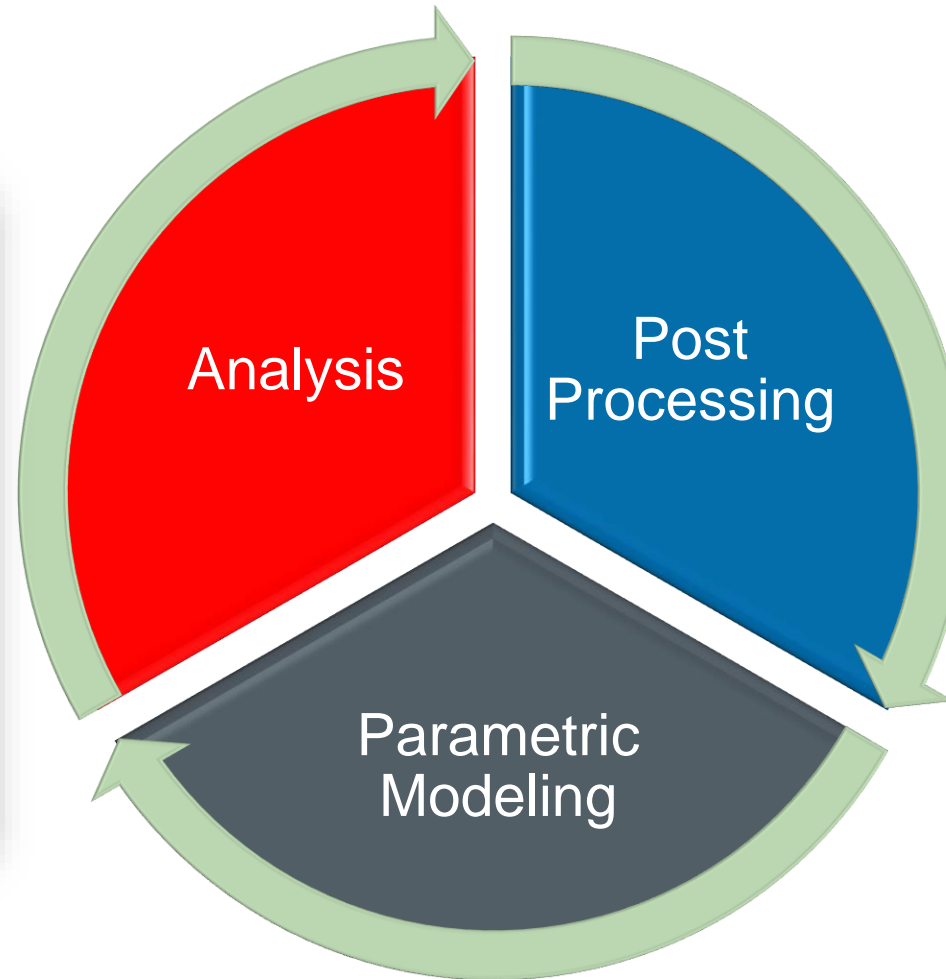
```
#Project Files
projectFiles = defaultSACSDir + "\\Demos\\Demo14"
SACSInputFile = projectFiles + "\\sacinp.demo14"
runFilePath = projectFiles + "\\demo14.runx"

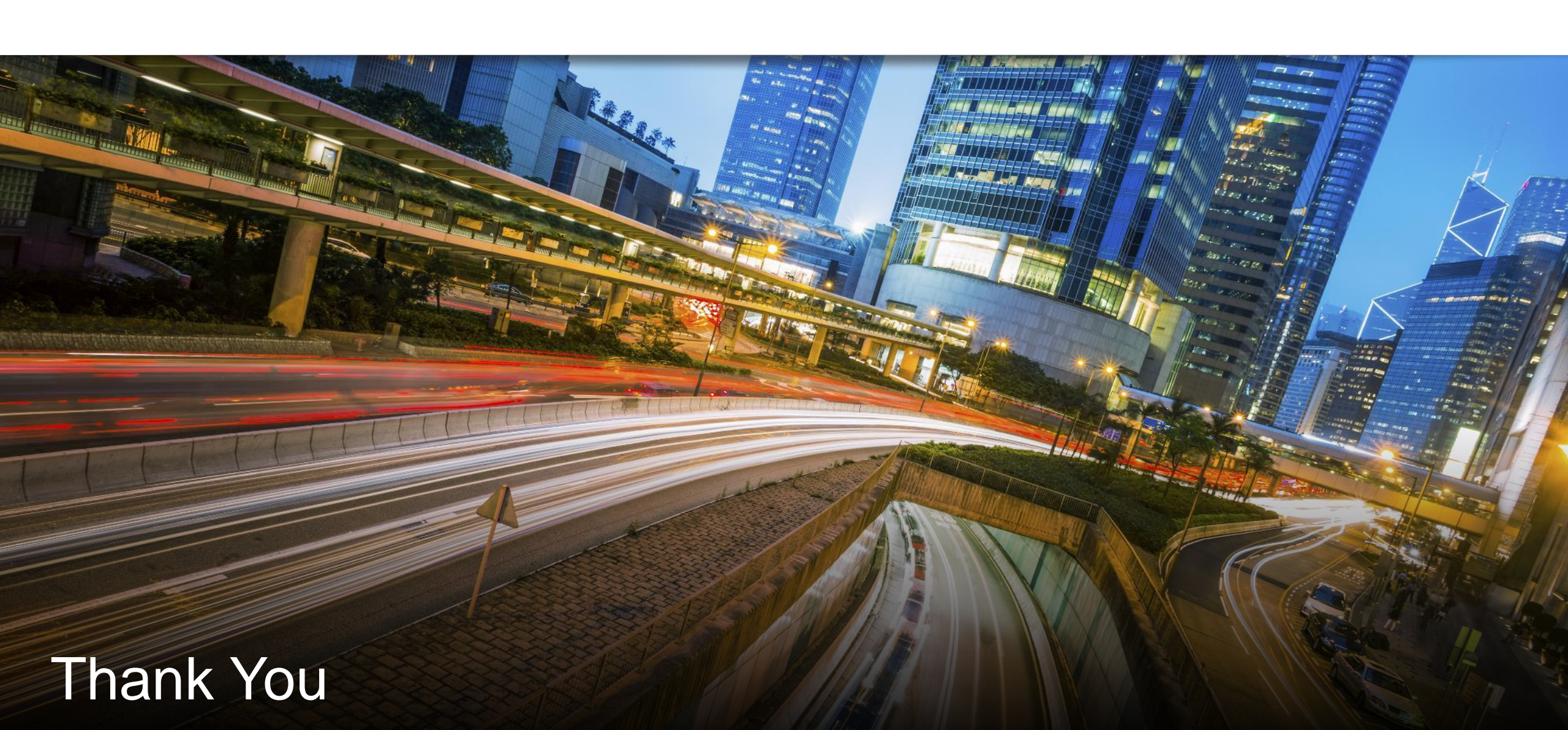
def RunSACS():
    #Execute the SACS engine.
    res = subprocess.run([enginePath,runFilePath,defaultSACSDir], s
    return res

def ReadMemberResults():
    conn = sqlite3.connect(projectFiles+ "\\sacsd.db")
    cur = conn.cursor()
    #Get all members with a MaxUC greater than 0.9
    cur.execute('SELECT MemberName,MAX(MaxUC),SegmentNumber FROM R_
    results = cur.fetchall()
    conn.close()
    return results

def EvaluateDesign(results):
    #If the results list is empty it means that there are no member
    if len(results) == 0:
        return True

def GetGRUPforMember(member):
    grup=""
    joints = member.split("-")
```





Thank You