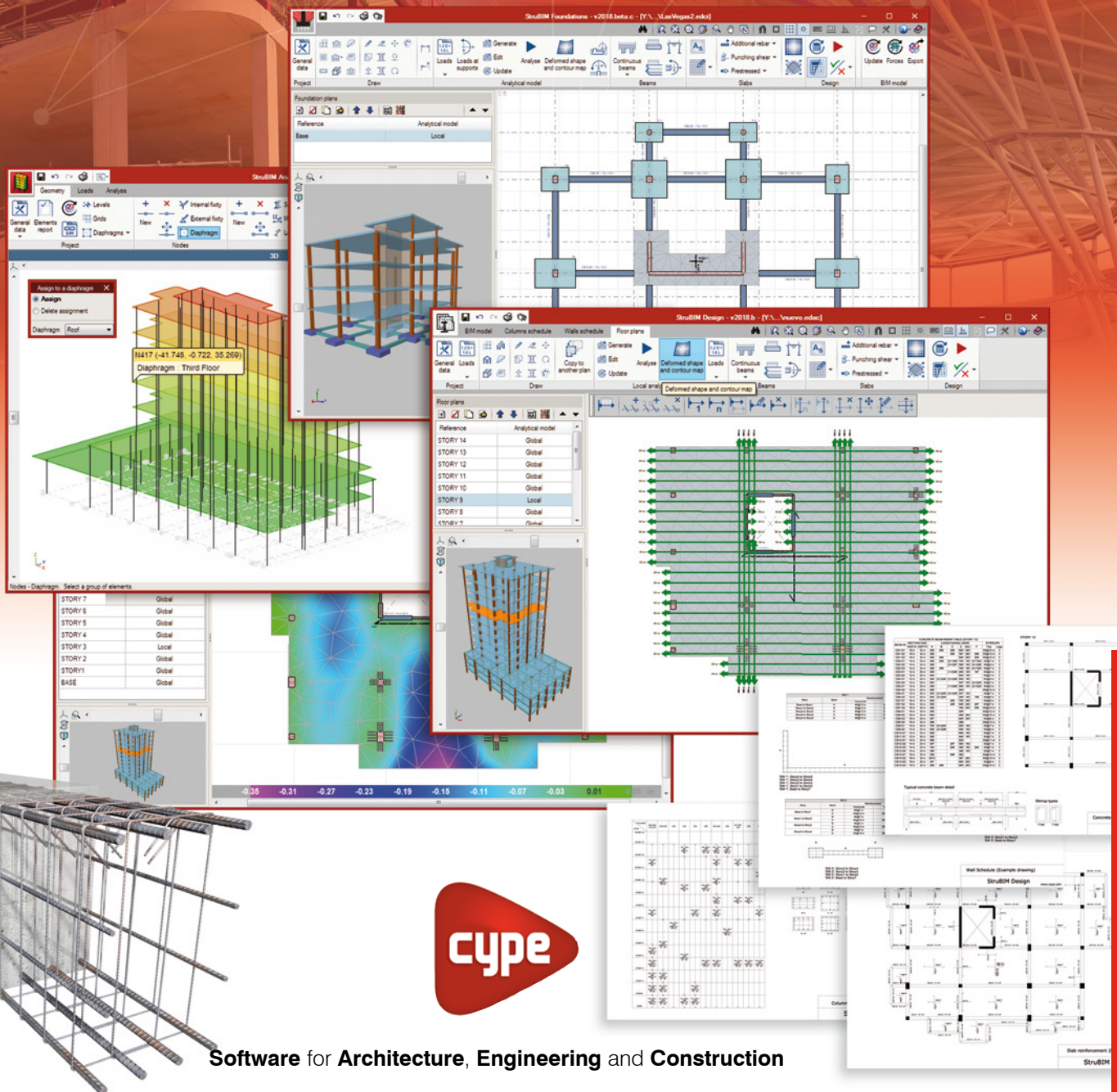


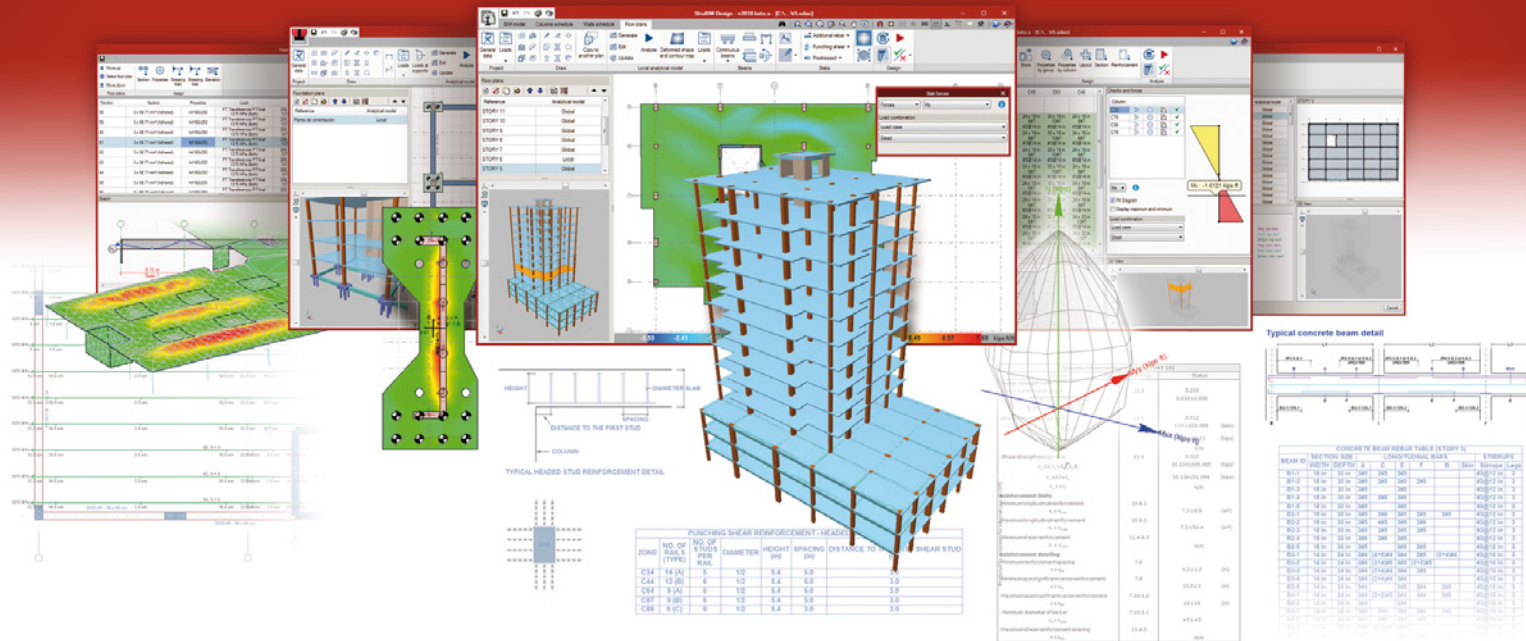
StruBIM

StruBIM Analysis | StruBIM Design | StruBIM Foundations

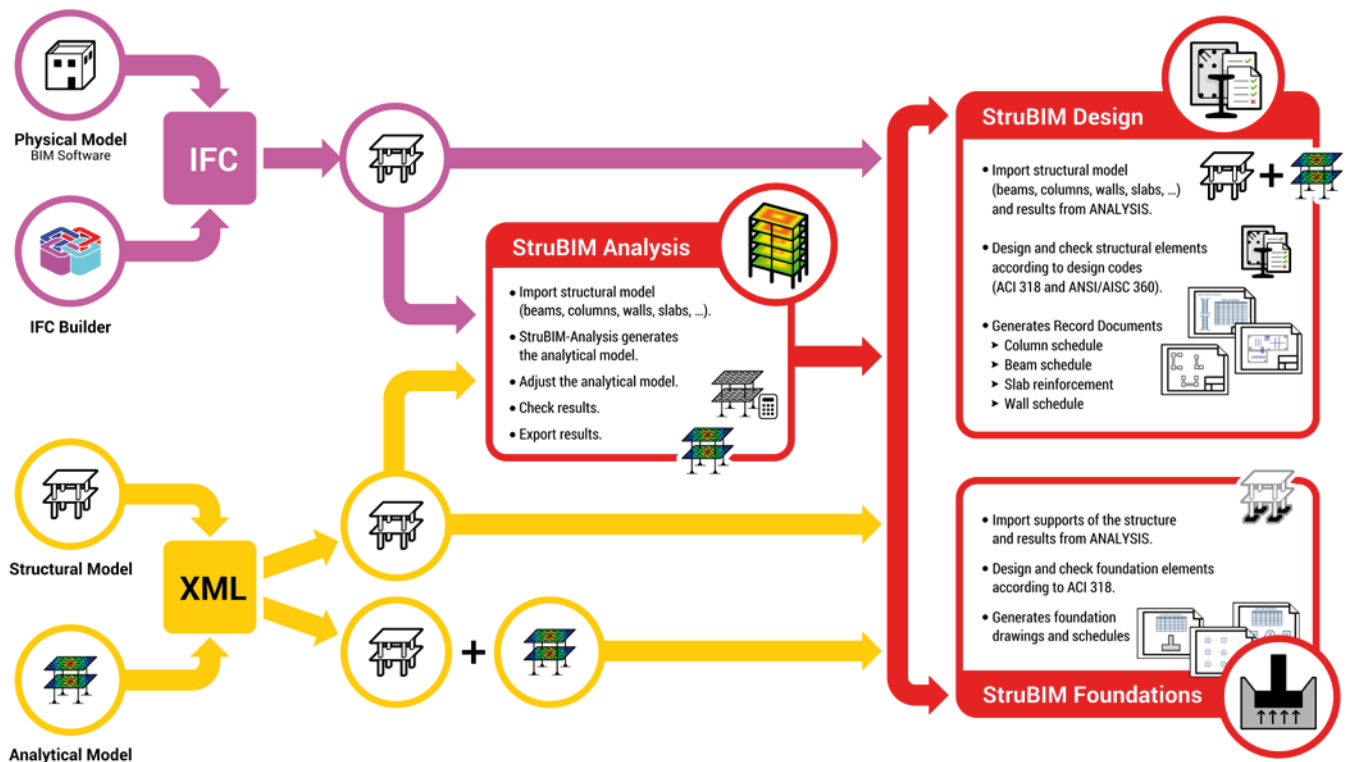


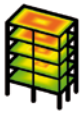
StruBIM

powered by OpenSees



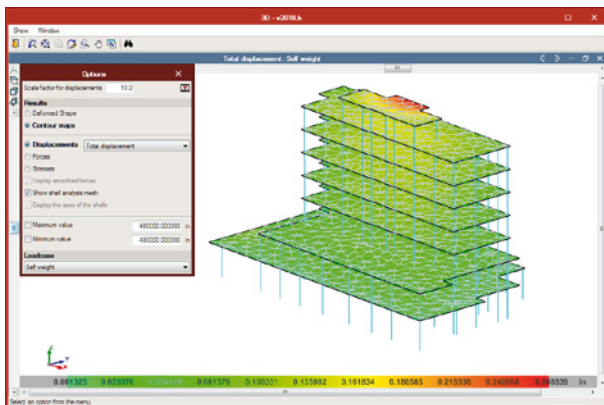
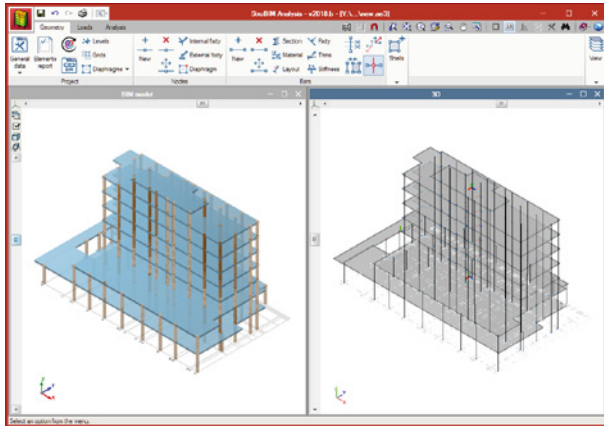
StruBIM is a group of applications aimed to analysis, design and generate structural plans. These applications are focused on collaborative work through the exchange of files in standard format, IFC and XML.



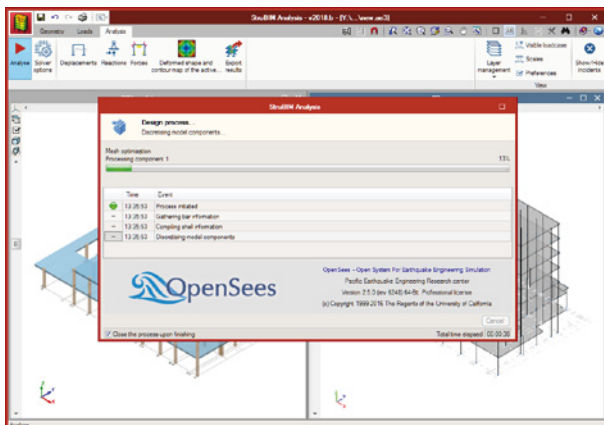


StruBIM Analysis

StruBIM Analysis is a tool designed to generate, edit and calculate an analytical model developed from a structural model.



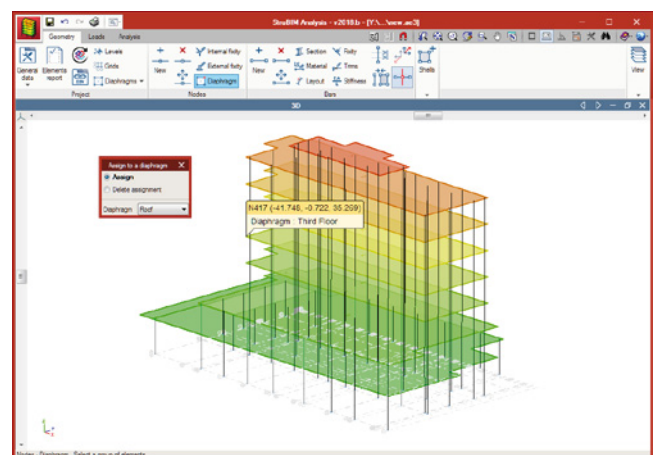
The analysis of the loads is done by a 3D spatial calculation. Users have the possibility to use two different calculation engines, the CYPE Frontal Solver engine (developed by CYPE) and the OpenSees® engine (developed by the Pacific Earthquake Engineering Research Center of the University of California).



The structural model can be imported through a file in IFC format generated from IFC Builder (CYPE) and other BIM modeling programs, or a file in XML format.

The analytical model is generated from the imported structural model, by discretizing the structure into bar-type elements, nodes and triangular finite element sheets (FEM). The user has the possibility to adjust the model by defining or editing:

- Load cases
- Loads on nodes bars or shells
- Wind loads generated automatically in accordance with the ASCE 7-10 standard
- Diaphragms
- Boundary conditions
- Properties of materials and sections
- Shells discretization size

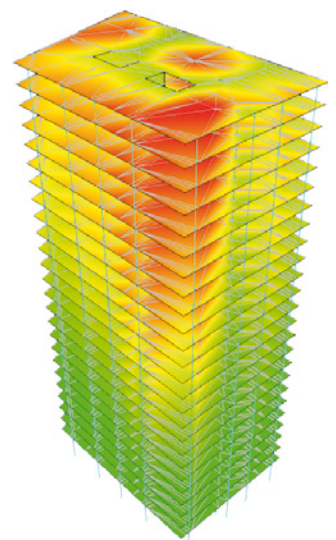


Generated wind loads				
Load pattern	Fx (kps)	Fy (kps)	X eccentricity (ft)	Y eccentricity (ft)
w 1 [Case 1, 0]	1.306	0.000	0.000	0.000
w 2 [Case 1, 90]	0.000	3.798	0.000	0.000
w 3 [Case 2, 0, -e1]	0.979	0.000	0.000	-2.939
w 4 [Case 2, 0, e1]	0.979	0.000	0.000	2.939
w 5 [Case 2, 90, -e2]	0.000	2.849	7.096	0.000
w 6 [Case 2, 90, e2]	0.000	2.849	-7.096	0.000
w 7 [Case 3, 0]	0.979	-2.365	0.000	0.000
w 8 [Case 3, 90]	1.180	2.849	0.000	0.000
w 9 [Case 4, 0, -e1, -e2]	0.735	-1.775	-7.096	-2.939
w 10 [Case 4, 0, e1, e2]	0.735	-1.775	7.096	2.939
w 11 [Case 4, 90, -e1, e2]	0.886	2.139	7.096	-2.939
w 12 [Case 4, 90, e1, -e2]	0.886	2.139	-7.096	2.939

As a result of the analysis we can check:

- Displacements and reactions
- Graphic diagrams of displacements and stresses
- Contour line diagrams of displacements and stresses

The analytical model and its results are exported to StruBIM Design.





StruBIM Design

StruBIM Design is a tool which designs, checks and edits reinforced concrete and steel structural elements, based on a structural model and a calculated analytical model.

The structural model can be imported using an IFC format file that has been generated using IFC Builder (CYPE), other BIM modelling programs or an XML format file. The calculated analytical model is imported from StruBIM Analysis or from the XML file.

StruBIM Design design and checks the structural elements (columns, beams, slabs and walls) and automatically provides a technical drawing.

The following reinforced concrete elements are designed and checked, according to the requirements of ACI 318-14, ACI 318-11 and ACI 318-08:

- Columns of rectangular or circular section
- Rectangular section beams
- Solid section slabs
- Solid section walls

The steel columns and beams of the following types are designed and checked, according to the ANSI / AISC 360-10 standard:

- I/Wide flange
- Rectangular hollow section
- Circular hollow section
- Rectangular built up box

The mixed concrete and steel columns of the following types are tested according to the requirements of the ANSI / AISC 360-10 standard:

- Rectangular tube filled with concrete
- Built up rectangular box made of laminated steel sheets, filled with concrete
- Circular tube filled with concrete
- Rectangular with embedded steel section
- Circular with embedded steel section

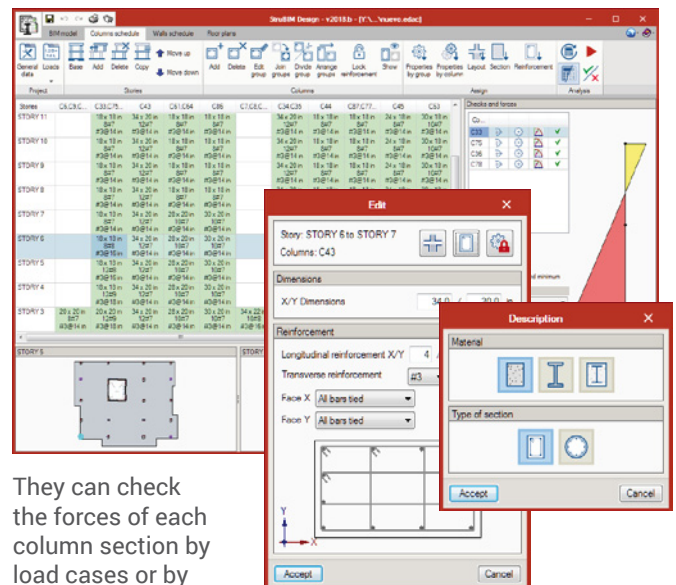
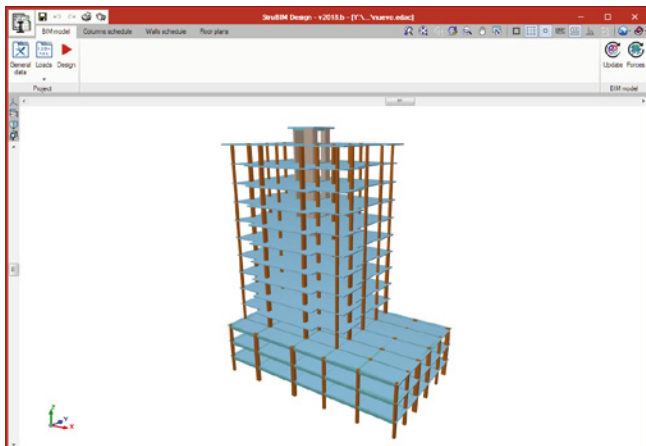
The results from the changes of the automatic design can be edited and can be checked for both the reinforced concrete sections and reinforcements and the steel sections.

Design results can be directly transferred to technical drawings of the various elements: columns, beams, slabs and walls, in accordance with representation requirements and project contents (Record Engineer):

- Column schedule
- Cutting of beams
- Plans for slab reinforcement
- Plans for wall reinforcement

Column Schedule

Using this application, the user can dimension, edit and check the columns of the project. The user has the option of dimensioning the columns by taking into account reinforcement continuity criteria.



They can check the forces of each column section by load cases or by combinations, as well as having a complete list of all the performed checks.

Page preview

Checks

Concrete column summary (C43 - STORY 7)

Checks	ACI 318-14	Status
Design strength ratio		
- Flexural and axial strength	22.4	0.192
$\frac{P^* + M_x^* + M_y^*}{\sqrt{(P^*)^2 + (M_x^*)^2 + (M_y^*)^2}} \leq 1$		$0.192 \leq 1.000$
- Shear strength along X-axis	22.5	0.001
$V_u \leq \phi (V_c + 8\sqrt{f'_c} b_w d)$		$0.254 \leq 427.314$ (kips)
$V_u \leq 0.5\phi V_c$		$0.254 \leq 52.691$ (kips)
$V_u \leq \phi V_c$		N/N
- Shear strength along Y-axis	22.5	0.002
$V_u \leq \phi (V_c + 8\sqrt{f'_c} b_w d)$		$0.774 \leq 406.746$ (kips)
$V_u \leq 0.5\phi V_c$		$0.774 \leq 50.155$ (kips)
$V_u \leq \phi V_c$		N/N
Reinforcement limits		
Minimum longitudinal reinforcement	10.6.1.1	$3.72 \geq 6.8$ (in ²)
$A_s \geq A_{s,min}$		
Maximum longitudinal reinforcement	10.6.1.1	$3.72 \leq 54.4$ (in ²)
$A_s \leq A_{s,max}$		
Minimum shear reinforcement	10.6.2	N/N
$A_v \geq A_{v,min}$		
Reinforcement detailing		
Minimum reinforcement spacing	25.2	$4.6 \geq 1.5$ (in)
$s \geq s_{min}$		
Minimum spacing of transverse reinforcement	25.2	$13.6 \geq 1$ (in)
$s \geq s_{min}$		
Maximum spacing of transverse reinforcement	25.7.2.1	$14 \leq 10$ (in)
$s \leq s_{max}$		
Minimum diameter of tie bar	25.7.2.2	

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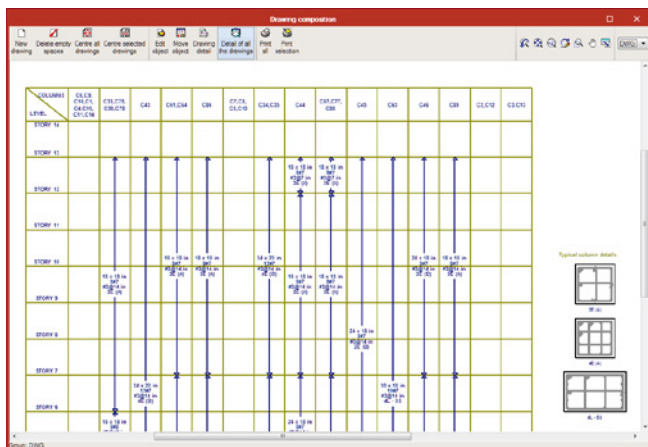
Similar to the schedule column, there are tools available to assign reinforcement, section and properties between the different walls.

Checks

Muro 3 (STORY 11)

Checks	ACI 318-14	Status
Muro 3 (STORY 11)		
Design strength ratio		
- Flexural and axial strength	22.4	0.110
$\frac{P^* + M_x^* + M_y^*}{\sqrt{(P^*)^2 + (M_x^*)^2 + (M_y^*)^2}} \leq 1$		$0.110 \leq 1.000$
Span 8 [11]		
Design strength ratio		
- In-plane shear strength	11.5.4	0.175
$V_u \leq \phi V_c$		$10.278 \leq 58.639$ (kips)
$V_u \leq \phi V_c$		N/N
- Out-of-plane shear strength	22.5	
$V_u \leq \phi V_c$		$V_u = 2.006$ (kips)
$V_u \leq \phi V_c + \frac{A_v}{s} f_y d$		$V_u = 93.199$ (kips)
Reinforcement limits		$A_v/s : N/N$

Finally, the drawing of the columns schedule is obtained.



For every section of the wall in each story, the program performs a check for axial and biaxial-bending moment. For each segment of the wall, there is a shear check into and out of the plane.

As a result, the user obtains a list of all the checks and a drawing that is automatically generated, with different sections of the walls represented together with a table that indicates the reinforcement of each wall on each floor.

Drawing composition

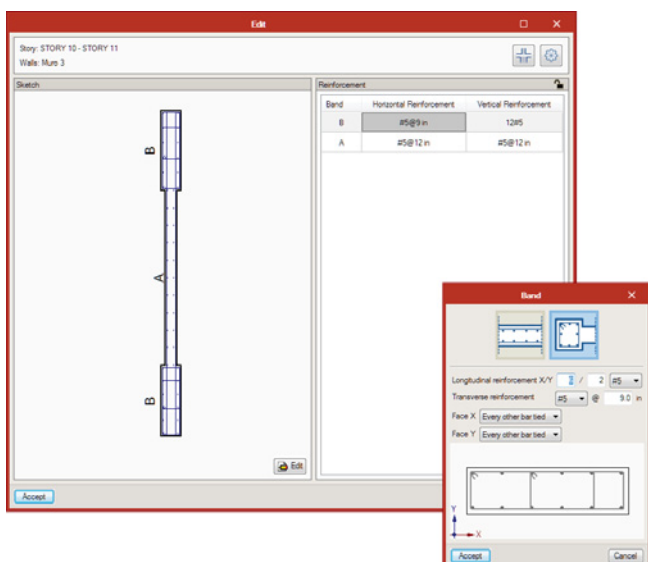
Story	Band	Reinforcement	
		Horizontal	Vertical
STORY 10 to STORY 14	B	#5@9 in	12#5
	A	#5@12 in	#5@12 in
STORY 9 to STORY 10	B	#5@9 in	12#5
	A	#5@12 in	#5@12 in
STORY 7 to STORY 9	B	#5@9 in	12#5
	A	#5@12 in	#5@12 in
STORY 5 to STORY 7	B	#5@9 in	12#5
	A	#5@12 in	#5@12 in
BASE to STORY 5	B	#5@9 in	12#5
	A	#5@12 in	#5@12 in

Muro 3, STORY 3 to STORY 14

Concrete Wall Schedule

Using this application, the user can design and check the shear walls.

Each wall can be composed of several sections, with each section assigned to either a confined reinforcement or an unconfined reinforcement.

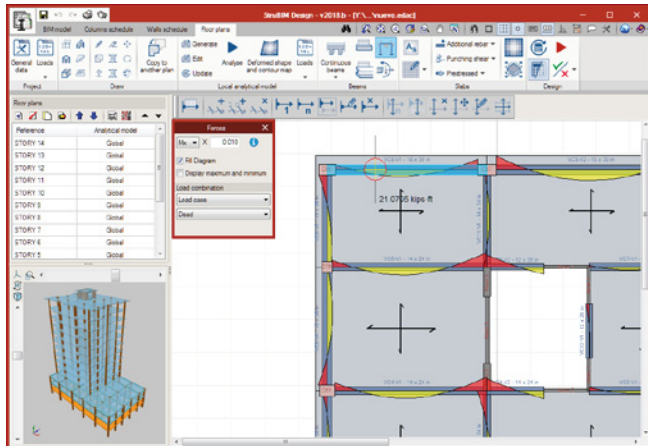


Floor Plan

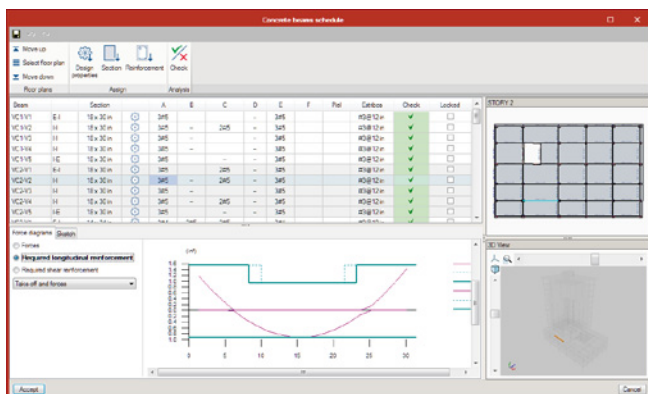
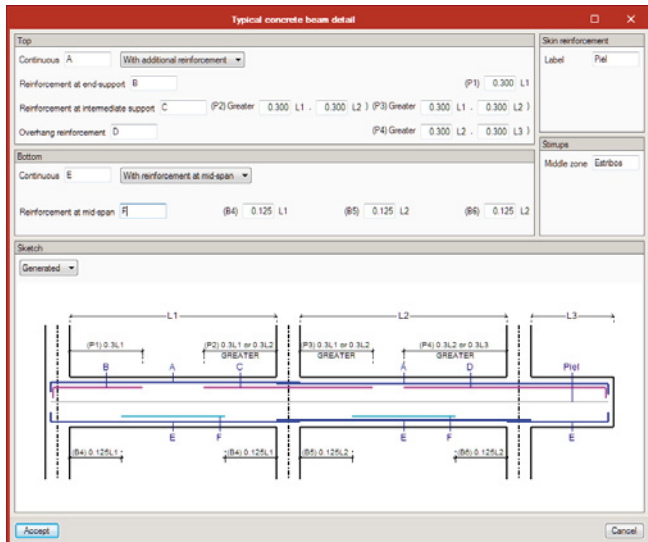
The design of beams and slabs is done from the floor plans tab.

Beams

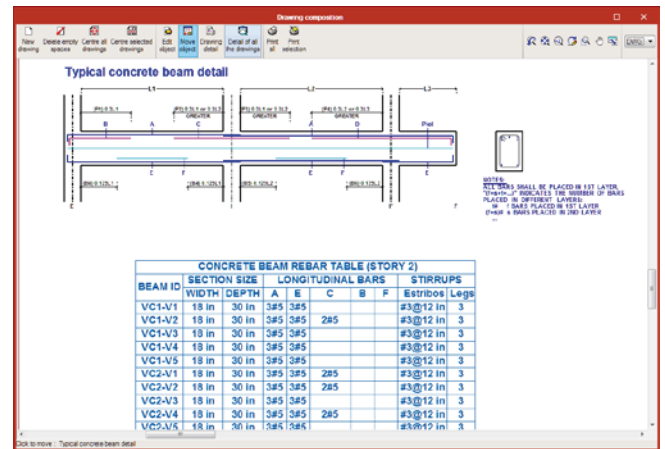
Based on the beam's geometry and the forces present in the beam, the program can determine the appropriate reinforcement dimensions and calculate the checks established by the selected standard.



The different frames of the project will be designed according to the typical concrete beam detail defined by the user.



As a result, the program generates the beam schedule based on where the reinforcement of each beam is associated with the typical details.



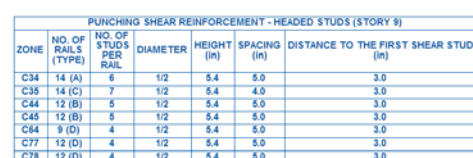
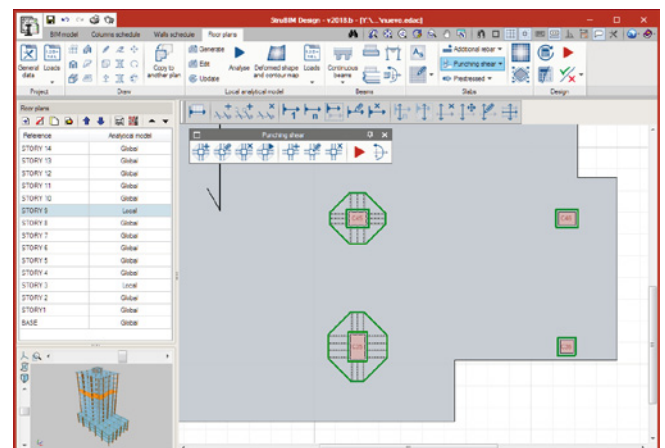
BEAM ID	SECTION SIZE	WIDTH	DEPTH	A	B	C	D	E	F	STIRRUPS	Legs
VC1-V1	18 in	30 in	345	345						#3@12 in	3
VC1-V2	18 in	30 in	345	345	245					#3@12 in	3
VC1-V3	18 in	30 in	345	345						#3@12 in	3
VC1-V4	18 in	30 in	345	345						#3@12 in	3
VC1-V5	18 in	30 in	345	345						#3@12 in	3
VC2-V1	18 in	30 in	345	345	245					#3@12 in	3
VC2-V2	18 in	30 in	345	345	245					#3@12 in	3
VC2-V3	18 in	30 in	345	345	245					#3@12 in	3
VC2-V4	18 in	30 in	345	345	245					#3@12 in	3
VC2-V5	18 in	30 in	345	345	245					#3@12 in	3

Slabs

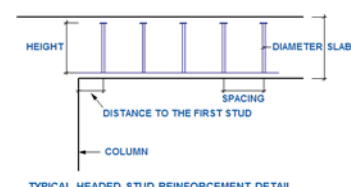
The program designs the continuous reinforcement of the slab and checks the additional reinforcement introduced by the user. The program checks each of the discretization points of the slab.

Punching shear reinforcements

The program designs the punching reinforcements (stirrup or headed studs) and verifies the resistance in the inner and outer perimeters to such reinforcement. These resistances are verified, in the mentioned critical perimeters, if the resistance against tangential stresses in slabs is exceeded.



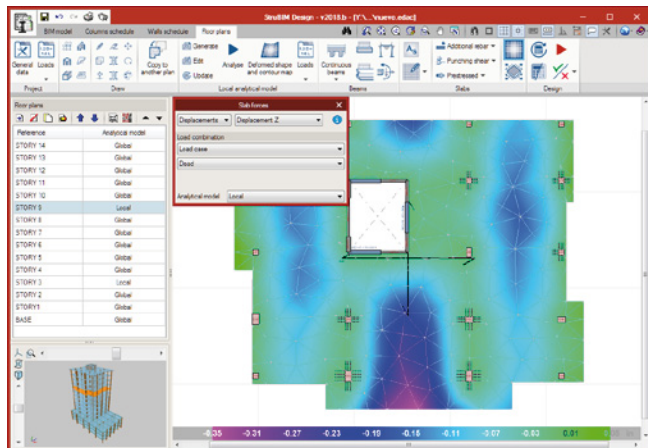
ZONE	NO. OF RAILS (TYPE)	DIAMETER	HEIGHT (in)	SPACING (in)	DISTANCE TO THE FIRST SHEAR STUD (in)
C34	14 (A)	6	1/2	5.4	5.0
C35	14 (C)	7	1/2	5.4	4.0
C44	12 (B)	5	1/2	5.4	5.0
C45	12 (B)	5	1/2	5.4	5.0
C46	9 (D)	4	1/2	5.4	5.0
C77	12 (D)	4	1/2	5.4	5.0
C78	12 (D)	4	1/2	5.4	5.0



TYPICAL HEADED STUD REINFORCEMENT DETAIL

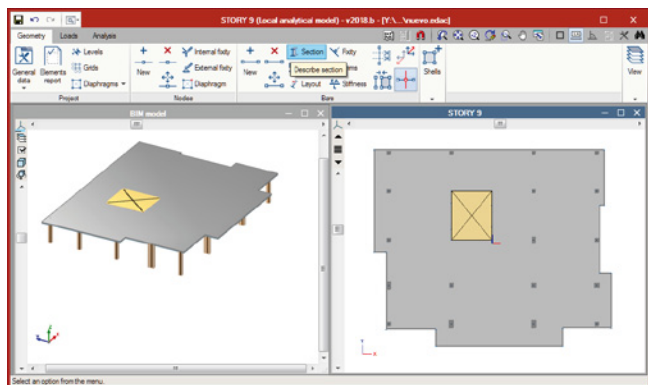
Local analytical models

The design of the supports (columns and walls) is calculated from the forces of the global model. The structural elements of the floor can be designed with the forces of the global or the local analytical model. The local analytical model allows the analysis of a floor to be independent of the global model from the rest of the floors, improving the flexibility during the structural analysis.



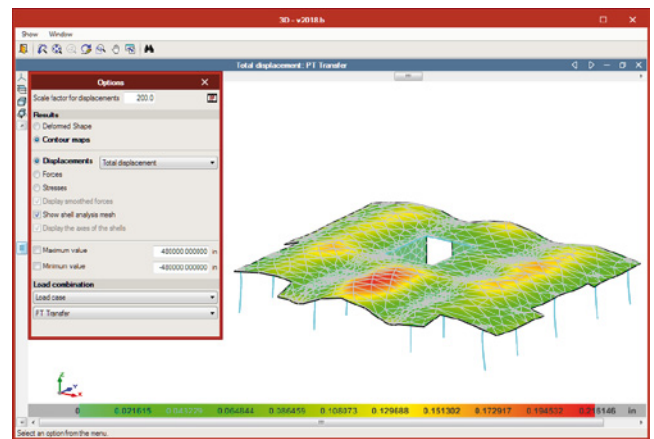
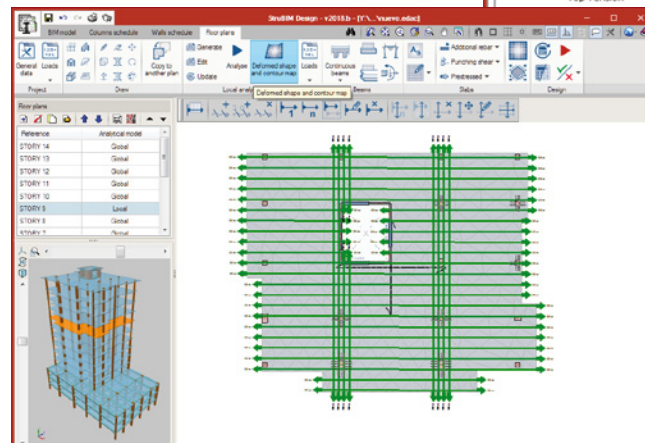
When the user edits the local analytical model, they can access the StruBIM Analysis program, where elements, geometry, loads, etc. can be modified.

The analysis, as performed in StruBIM Analysis, can also be completed with the CYPE Frontal Solver calculation engine (developed by CYPE) or the OpenSees © engine (developed by the Pacific Earthquake Engineering Research Center of the University of California).



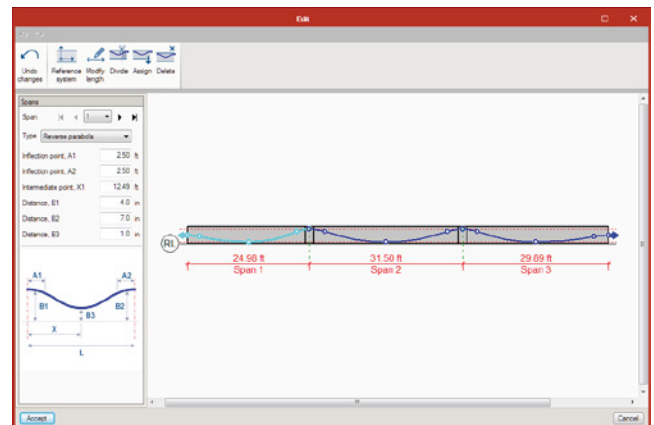
Post-tensioned slabs

StruBIM Design is capable of designing post-tensioned slabs. From a distribution of post-stressing tendons introduced by the user, stress analysis can be performed by taking into account the effects of post-stressing.



The user can introduce the layout and section of the tendons, the tension loads and the percentages of losses (instantaneous and deferred). The program generates two post-tensioning load cases (one with instantaneous losses and the other with total losses - instantaneous + deferred) in which it will introduce the deviation loads produced by the tendon layout. During the slab reinforcement design stage, and if the tendons have been defined as bonded, if there is any capacity excess or shortage regarding the contribution of the active reinforcement, it will be taken into account to establish the passive reinforcement.

The tendons can be introduced as a single tendon, concentrated tendons or distributed tendons.



The user can edit the tendons, modifying the geometry of the tendon tracing by spans, section, stressing load and stressing losses.

Check			
Serviceability requirements			
Stresses in concrete immediately after prestress transfer			
- Extreme fiber stress - X dir			
Top Compression	$f_{top} \leq 0.60 f_{ci}$	24.5.3.1	252.27 ≤ 1920.00 psi
Bottom Compression	$f_{bot} \leq 0.60 f_{ci}$	24.5.3.2	289.34 ≤ 1920.00 psi
Top Tension	$f_{top} \leq 3.00 \times f_{ci}$	24.5.3.1	0.00 ≤ 169.71 psi
Bottom Tension	$f_{bot} \leq 3.00 \times f_{ci}$	24.5.3.2	0.00 ≤ 169.71 psi
Top Compression	$f_{top} \leq 0.60 f_{ci}$	24.5.3.1	171.48 ≤ 1920.00 psi
Bottom Compression	$f_{bot} \leq 0.60 f_{ci}$	24.5.3.2	92.35 ≤ 1920.00 psi
Top Tension	$f_{top} \leq 3.00 \times f_{ci}$	24.5.3.1	0.00 ≤ 169.71 psi
Bottom Tension	$f_{bot} \leq 3.00 \times f_{ci}$	24.5.3.2	0.00 ≤ 169.71 psi
Top Compression	$f_{top} \leq 0.60 f_{ci}$	24.5.4.1 (b)	260.49 ≤ 2400.00 psi
Bottom Compression	$f_{bot} \leq 0.60 f_{ci}$	24.5.2.1	243.67 ≤ 2400.00 psi
Top Tension	$f_{top} \leq 6.00 \times f_{ci}$	24.5.2.1	0.00 ≤ 379.47 psi
Bottom Tension	$f_{bot} \leq 6.00 \times f_{ci}$	24.5.2.1	0.00 ≤ 379.47 psi
Top Compression	$f_{top} \leq 0.60 f_{ci}$	24.5.4.1 (b)	128.07 ≤ 2400.00 psi
Bottom Compression	$f_{bot} \leq 0.60 f_{ci}$	24.5.2.1	154.21 ≤ 2400.00 psi
Top Tension	$f_{top} \leq 6.00 \times f_{ci}$	24.5.2.1	0.00 ≤ 379.47 psi
Bottom Tension	$f_{bot} \leq 6.00 \times f_{ci}$	24.5.2.1	0.00 ≤ 379.47 psi
in service loads			



StruBIM Foundations

StruBIM Foundations is a tool for the design of foundations. From the supports of the structure the user can generate, design and check the foundation elements.

The supports and the forces in the base can be entered manually or imported through a file in IFC or XML format.

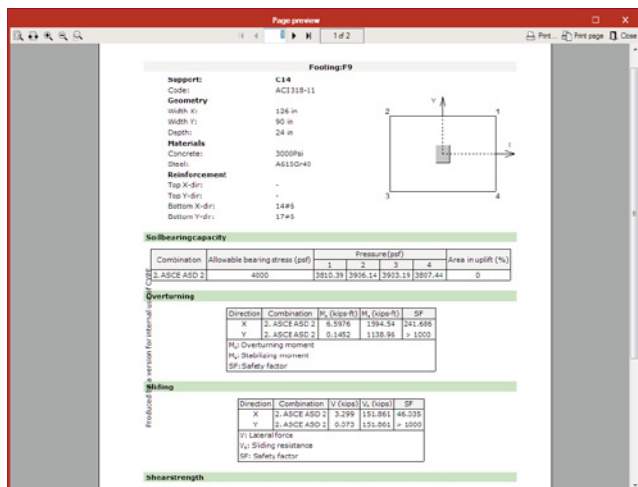
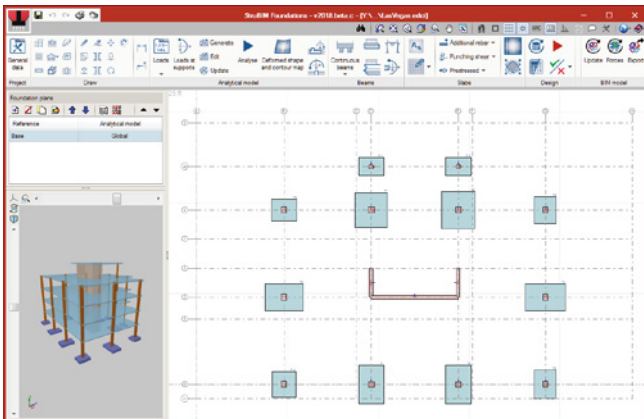
It is capable of designing different foundation elements, such as: pad footings, pile caps, foundation slabs, pile-supported slabs and beams.

The reinforced concrete elements are designed in accordance with ACI 318-14, ACI 318-11 and ACI 318-08.

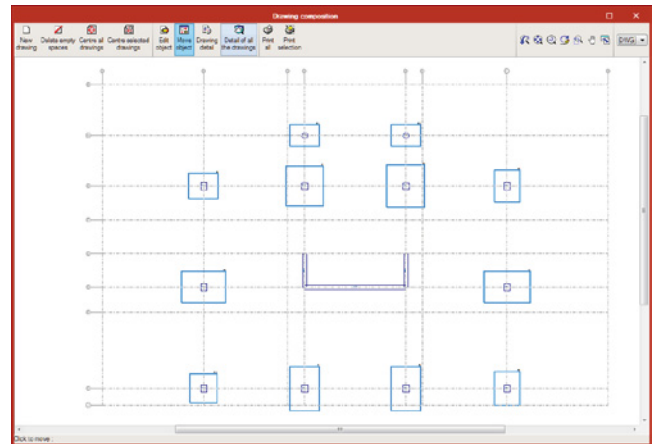
Pad Footings

It is possible to check and design reinforced concrete rectangular footings with the support in the center or with eccentricity.

As a result, the program offers a list of the performed checks, as well as the foundation plan with the pad footing table attached.

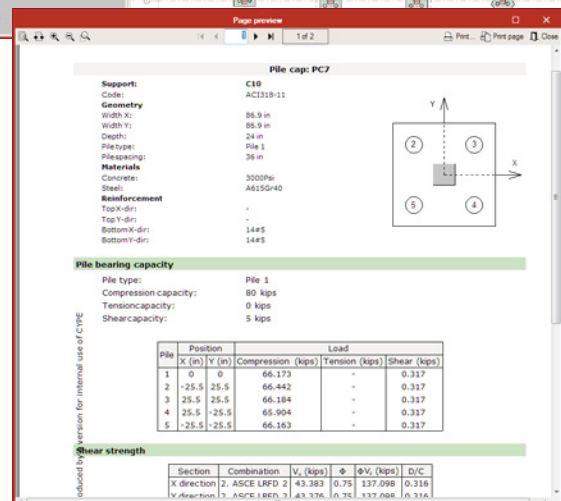
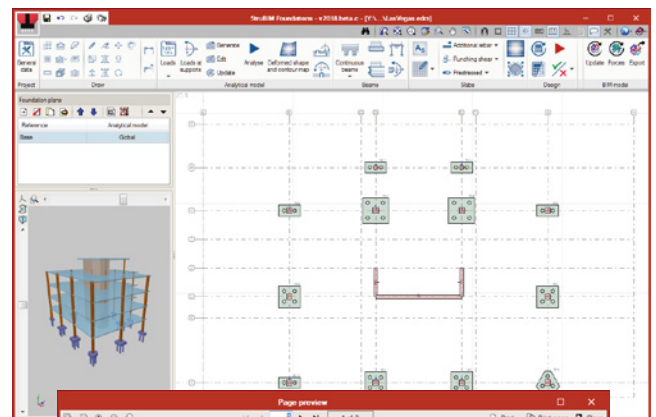


REF.	NO. FOOTINGS	DIMENSIONS	DEPTH	BOTTOM REINFORCEMENT		TOP REINFORCEMENT	
				SHORT SIDE	LONG SIDE	SHORT SIDE	LONG SIDE
F1	1	84 x 126 in	24 in	1785	1485	-	-
F2	1	84 x 126 in	24 in	1785	1485	-	-
F3	1	72 x 96 in	24 in	1585	1585	-	-
F4	1	132 x 90 in	24 in	2085	1685	-	-
F5	1	72 x 90 in	24 in	1685	1485	-	-
F6	1	108 x 120 in	24 in	1585	1485	-	-
F7	1	108 x 114 in	24 in	1485	1385	-	-
F8	1	84 x 72 in	24 in	1085	985	-	-
F9	1	126 x 90 in	24 in	1785	1485	-	-
F10	1	78 x 84 in	24 in	1085	985	-	-
F11	1	84 x 60 in	24 in	1185	985	-	-
F12	1	84 x 60 in	24 in	1185	985	-	-



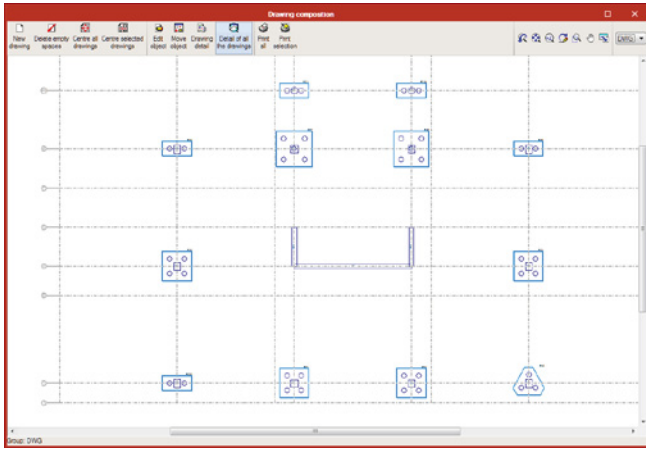
Pile Caps

The program is capable of design the reinforced concrete pile cap. During the generation of foundation elements, the optimum number of piles is determined and afterwards, so is the depth and reinforcement.



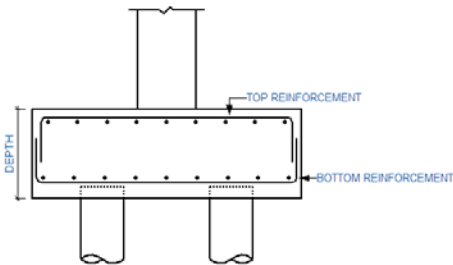
Slabs

As a result, the program offers a list of the checks carried out, as well as the foundation plan with the pad footing or pile cap table attached.



REF.	NO.	PILE CAPS	DIMENSIONS	DEPTH	BOTTOM REINFORCEMENT		TOP REINFORCEMENT		DETAIL	PILES	PILE SPACING
					SHORT SIDE	LONG SIDE	SHORT SIDE	LONG SIDE			
PC1	1		72 x 72 in	24 in	1145	1145	-	-	PC4	4 x Pile 1	36 in
PC2	1		72 x 72 in	24 in	1145	1145	-	-	PC4	4 x Pile 1	36 in
PC3	1		77.5 x 67.2 in	24 in	1245	1245	-	-	PC3	3 x Pile 1	36 in
PC4	1		72 x 72 in	24 in	1145	1145	-	-	PC4	4 x Pile 1	36 in
PC5	1		72 x 36 in	24 in	1145	1145	-	-	PC2	2 x Pile 1	36 in
PC6	1		66.9 x 66.9 in	24 in	1445	1445	-	-	PC5	5 x Pile 1	36 in
PC7	1		66.9 x 66.9 in	24 in	1445	1445	-	-	PC5	5 x Pile 1	36 in
PC8	1		72 x 36 in	24 in	1145	1145	-	-	PC2	2 x Pile 2	36 in
PC9	1		72 x 72 in	24 in	1145	1145	-	-	PC4	4 x Pile 4	36 in
PC10	1		72 x 36 in	24 in	1145	1145	-	-	PC2	2 x Pile 1	36 in
PC11	1		72 x 36 in	24 in	1145	1145	-	-	PC2	2 x Pile 1	36 in
PC12	1		72 x 36 in	24 in	1145	1145	-	-	PC2	2 x Pile 1	36 in

TYPICAL PILE CAP DETAIL

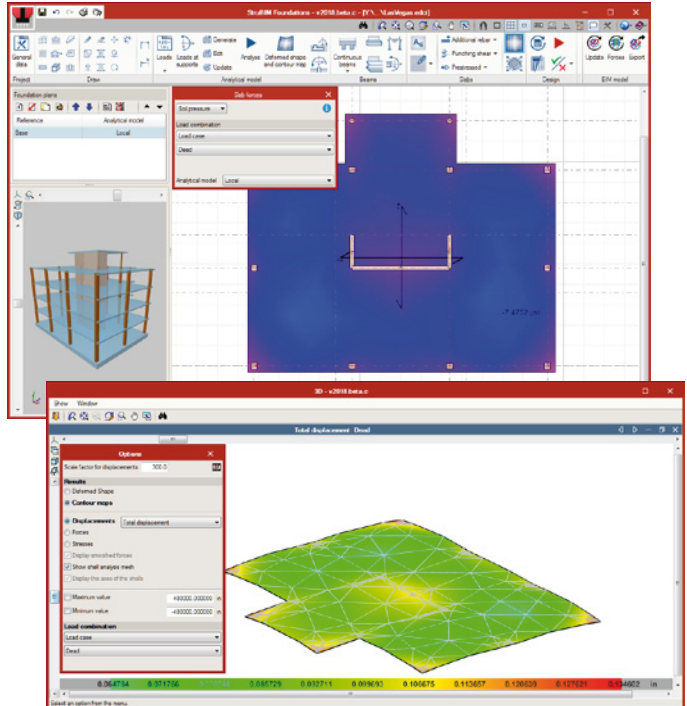


NOTES:
FOR SIZE, DEPTH AND REINFORCEMENT SEE SCHEDULE

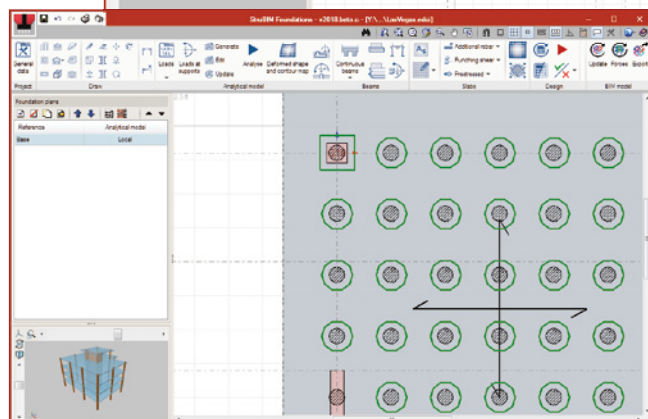
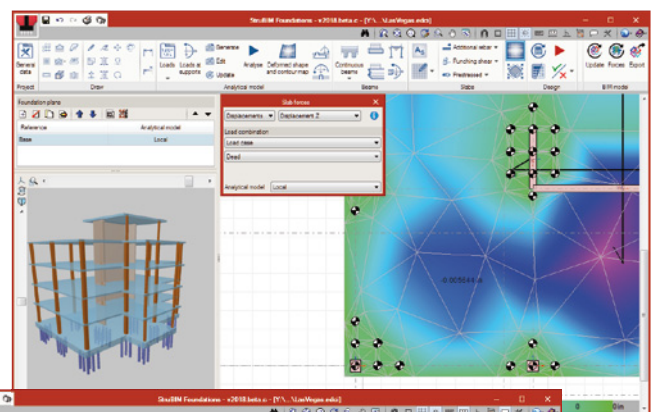
PILE	WIDTH	COMPRESSION CAPACITY	TENSION CAPACITY	SHEAR CAPACITY
Pile 1	14 in	80 kips	0 kips	5 kips
Pile 2	12 in	110 kips	6 kips	11 kips
Pile 4	18 in	250 kips	120 kips	3 kips

The user can introduce ground supported slabs or pile supported slabs. The program performs the analysis and design of the continuous reinforcement and verification of reinforcements.

The user can check the punching resistance of columns or piles as well as design the necessary punching reinforcements.

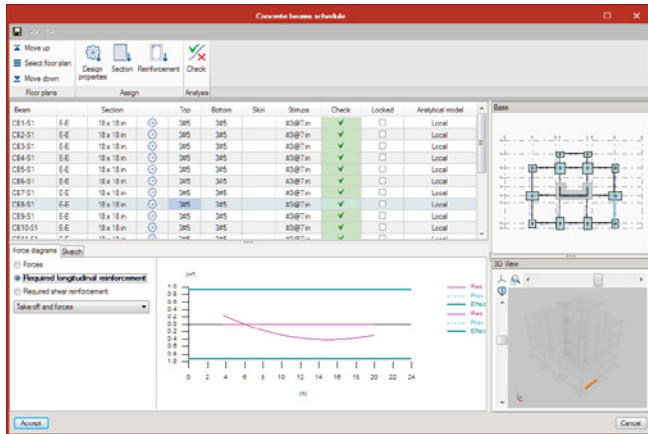
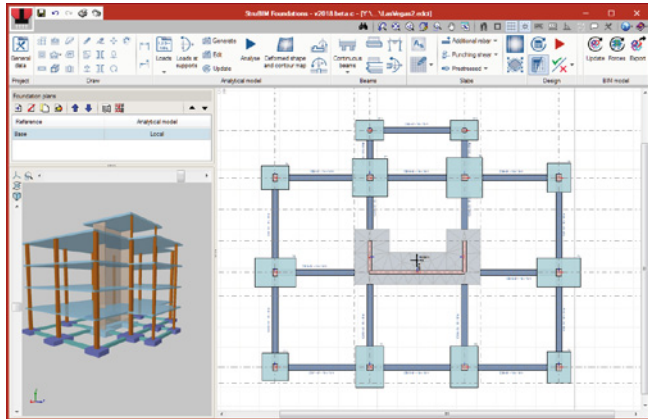


In addition, post-tension tendons can be arranged in the same way as it was in StuBIM Design, taking into account its distribution in the floors and the tendon profiles. In the stress analysis of the slab, the post stress effects will be taken into account.

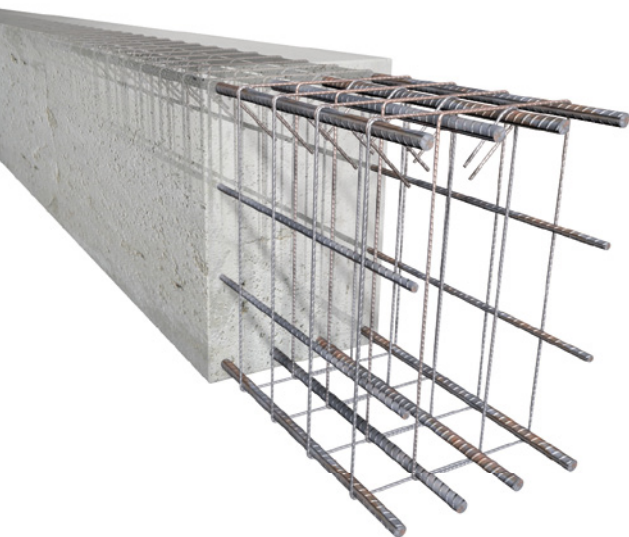


Beams

Beams that connect with other foundation elements can be introduced. These beams will intervene in the floor's local analytical model.

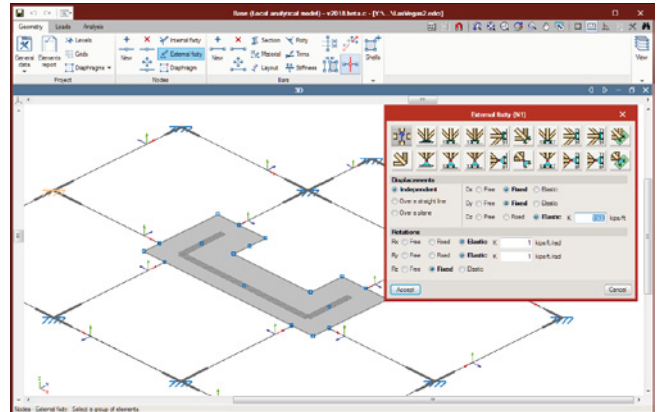


The beams are dimensioned and checked according to the type of reinforcement defined by the user. A list of the calculated checks is provided.

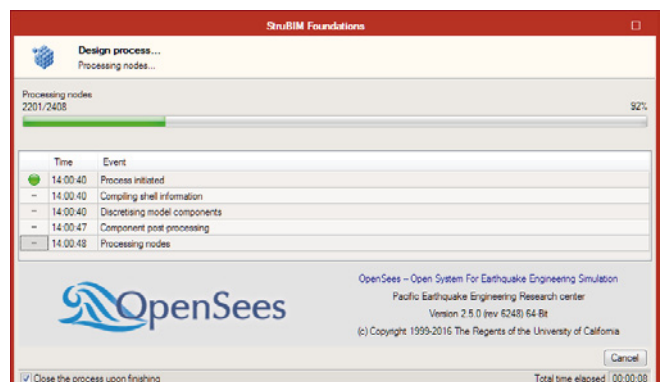
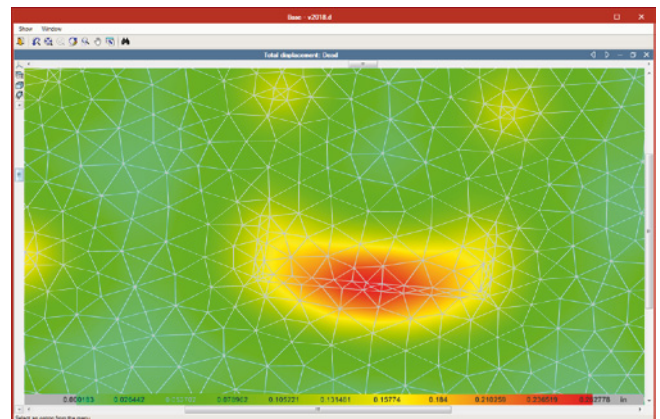


Analytical model

The isolated elements are checked and dimensioned with the loads defined in each support. The slabs and beams are checked and dimensioned with the forces obtained from the analytical model of the foundation, which can be edited by the user.

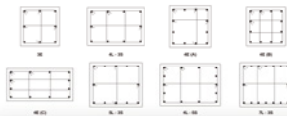


The stress analysis, from StruBIM Analysis and Design, can be done with the CYPE Frontal Solver calculation engine (developed by CYPE) or the OpenSees® engine (developed by the Pacific Earthquake Engineering Research Center of the University of California).



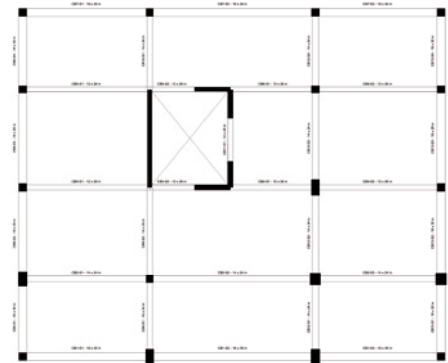
COLUMNS	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9
LEVEL	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9
STORY 14									
STORY 13									
STORY 12									
STORY 11									
STORY 10									
STORY 9									
STORY 8									
STORY 7									
STORY 6									
STORY 5									
STORY 4									
STORY 3									
STORY 2									
STORY 1									
BASE									

Typical column details

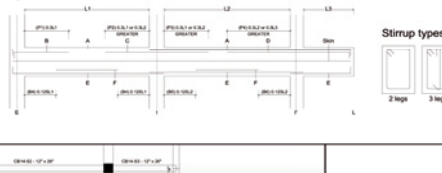


CONCRETE BEAM REBAR TABLE (STORY 13)										
BEAM ID	SECTION	LONGITUDINAL BARS						STIRRUPS		
		WIDTH	DEPTH	A	B	C	E	Size	Type	Legs
CB1-S1	18 in	30 in	345	285	585	293		#5@10 in	3	
CB1-S2	18 in	30 in	345	285	585	293		#5@10 in	3	
CB1-S3	18 in	30 in	345	285	585	293		#5@10 in	3	
CB2-S1	14 in	24 in	345	285	585	293		#5@10 in	3	
CB2-S2	14 in	24 in	345	285	585	293		#5@10 in	3	
CB2-S3	14 in	24 in	345	285	585	293		#5@10 in	3	
CB3-S1	12 in	26 in	345	285	585	293		#5@10 in	2	
CB3-S2	12 in	26 in	345	285	585	293		#5@10 in	2	
CB3-S3	12 in	26 in	345	285	585	293		#5@10 in	2	
CB4-S1	12 in	26 in	345	285	585	293		#5@10 in	2	
CB4-S2	12 in	26 in	345	285	585	293		#5@10 in	2	
CB4-S3	12 in	26 in	345	285	585	293		#5@10 in	2	
CB5-S1	12 in	26 in	345	285	585	293		#5@10 in	2	
CB5-S2	12 in	26 in	345	285	585	293		#5@10 in	2	
CB5-S3	12 in	26 in	345	285	585	293		#5@10 in	2	
CB6-S1	18 in	30 in	345	285	585	293		#5@10 in	3	
CB6-S2	18 in	30 in	345	285	585	293		#5@10 in	3	
CB6-S3	18 in	30 in	345	285	585	293		#5@10 in	3	
CB7-S1	18 in	30 in	345	285	585	293		#5@10 in	3	
CB7-S2	18 in	30 in	345	285	585	293		#5@10 in	3	
CB7-S3	18 in	30 in	345	285	585	293		#5@10 in	3	
CB8-S1	18 in	30 in	345	285	585	293		#5@10 in	3	
CB8-S2	18 in	30 in	345	285	585	293		#5@10 in	3	
CB8-S3	18 in	30 in	345	285	585	293		#5@10 in	3	
CB9-S1	14 in	24 in	345	285	585	293		#5@10 in	3	
CB9-S2	14 in	24 in	345	285	585	293		#5@10 in	3	
CB9-S3	14 in	24 in	345	285	585	293		#5@10 in	3	
CB10-S1	14 in	24 in	345	285	585	293		#5@10 in	3	
CB10-S2	14 in	24 in	345	285	585	293		#5@10 in	3	
CB10-S3	14 in	24 in	345	285	585	293		#5@10 in	3	
CB11-S1	12 in	26 in	345	285	585	293		#5@10 in	2	
CB11-S2	12 in	26 in	345	285	585	293		#5@10 in	2	
CB11-S3	12 in	26 in	345	285	585	293		#5@10 in	2	
CB12-S1	14 in	24 in	345	285	585	293		#5@10 in	3	
CB12-S2	14 in	24 in	345	285	585	293		#5@10 in	3	
CB12-S3	14 in	24 in	345	285	585	293		#5@10 in	3	
CB13-S1	18 in	30 in	345	285	585	293		#5@10 in	3	
CB13-S2	18 in	30 in	345	285	585	293		#5@10 in	3	
CB13-S3	18 in	30 in	345	285	585	293		#5@10 in	3	
CB13-S4	18 in	30 in	345	285	585	293		#5@10 in	3	

STORY 13



Typical concrete beam detail



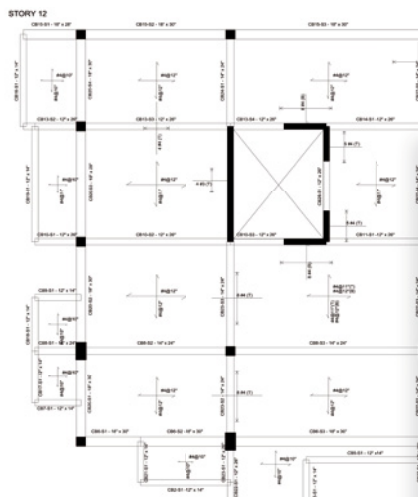
Stirrup types



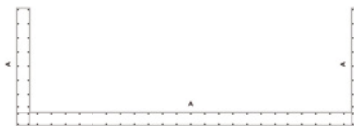
Concrete Beam Schedule (Example drawing)

StruBIM Design

www.cype.com



SW 1			
Story	Band	Horizontal	Vertical
Base to Story1	A	#5@12 in	#5@12 in
Story1 to Story2	A	#5@12 in	#5@12 in
Story2 to Story3	A	#5@12 in	#5@12 in
Story3 to Story4	A	#5@12 in	#5@12 in
Story4 to Story5	A	#5@12 in	#5@12 in



'SW 1': Story1 to Story5
'SW 1': Story2 to Story4
'SW 1': Story3 to Story2
'SW 1': Story4 to Story1
'SW 1': Base to Story1

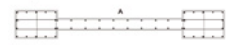
SW 2			
Story	Band	Horizontal	Vertical
Base to Story1	B	#5@12 in	1045
Story1 to Story2	B	#5@12 in	#5@12 in
Story2 to Story3	B	#5@12 in	1045
Story3 to Story4	B	#5@12 in	#5@12 in
Story4 to Story5	B	#5@12 in	1045

B B

SW 3			
Story	Band	Horizontal	Vertical
Base to Story1	B	#5@12 in	1445
Story1 to Story2	B	#5@12 in	1445
Story2 to Story3	B	#5@12 in	1445
Story3 to Story4	B	#5@12 in	1445
Story4 to Story5	B	#5@12 in	1445



'SW 3': Story3 to Story4

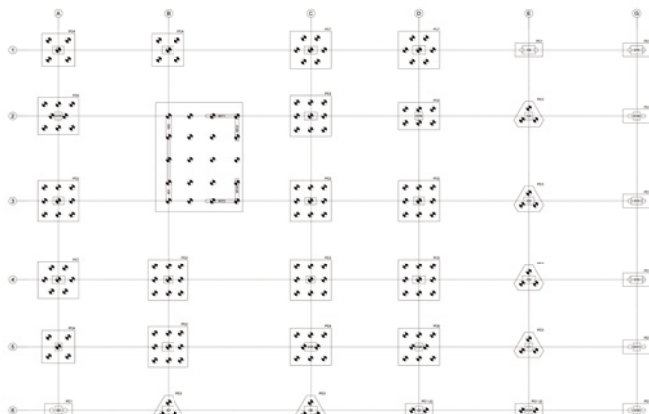


'SW 3': Story2 to Story3
'SW 3': Story1 to Story2
'SW 3': Base to Story1

Wall Schedule (Example drawing)

StruBIM Design

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507: Foundations (Pile Caps)

Example Drawing StruBIM Foundations

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StruBIM

StruBIM is a group of applications aimed at the analysis, design and generation of technical drawings for structural projects. These applications are focused on collaborative work through the exchange of files in standard format, IFC and XML.

This application is integrated into the OpenBIM workflow through the IFC standard.

