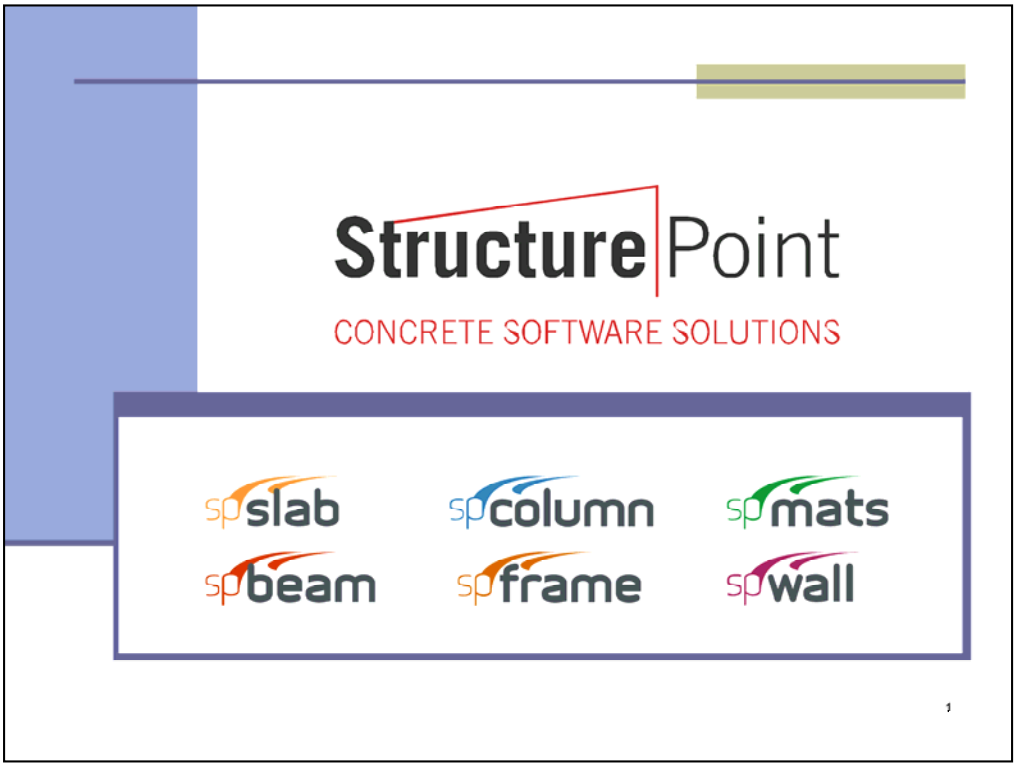
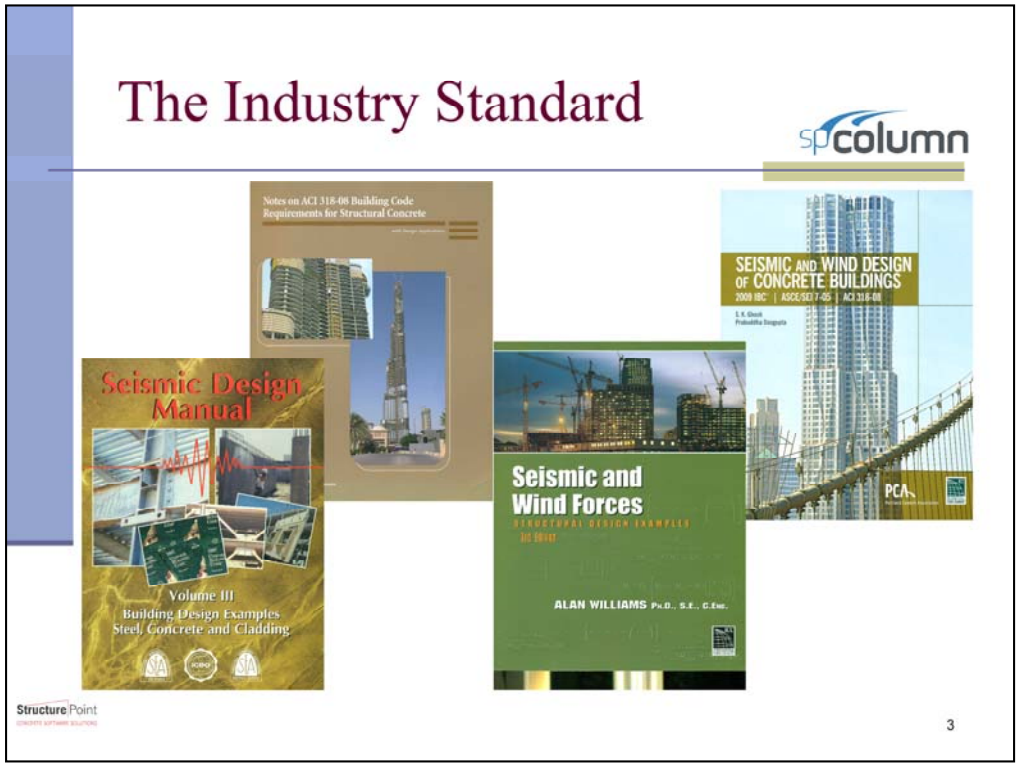
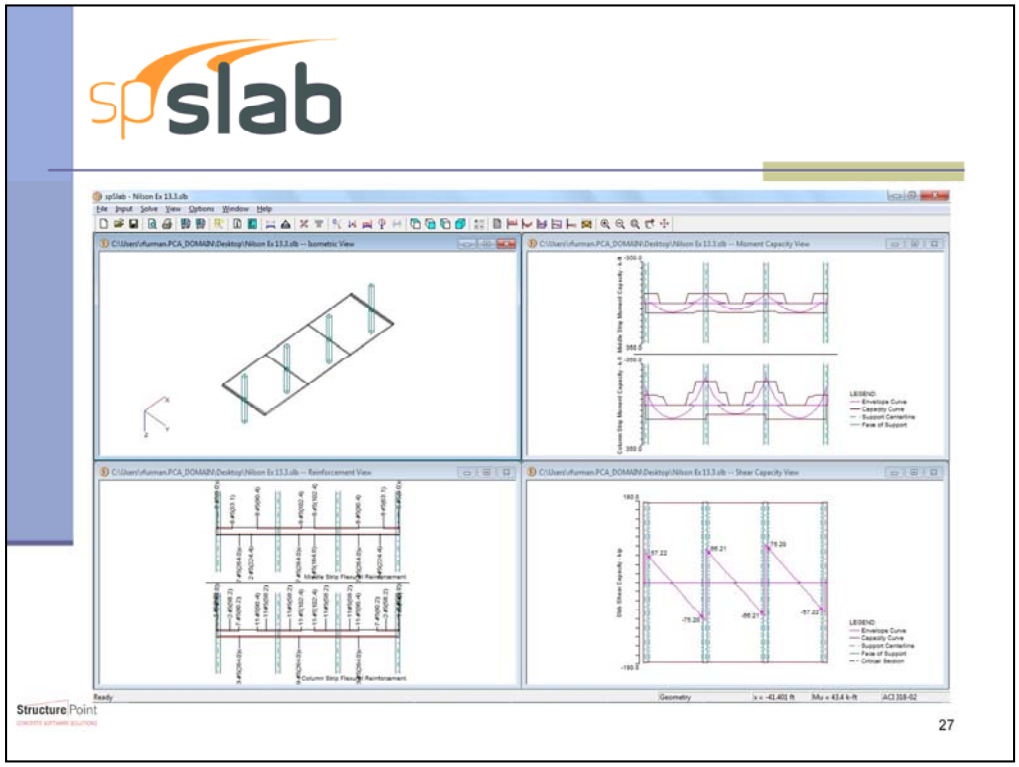


StructurePoint is a software company that provides concrete design solutions. Formerly the engineering software group of the Portland Cement Association (PCA), StructurePoint (SP) is located in Chicago and does business all around the world with clients in North America, the Middle and Far East. SP has representatives in India, Thailand, Saudi Arabia, Lebanon and the UAE. Formerly PCA products, the SP product line include design and analysis software for reinforced concrete beams, columns, mats, walls, slab systems, and frame analysis. These six programs make up the SP Suite. The software programs can be purchased as the Suite or individually to meet your specific needs over a large business computer network or as single standalone serving one laptop.

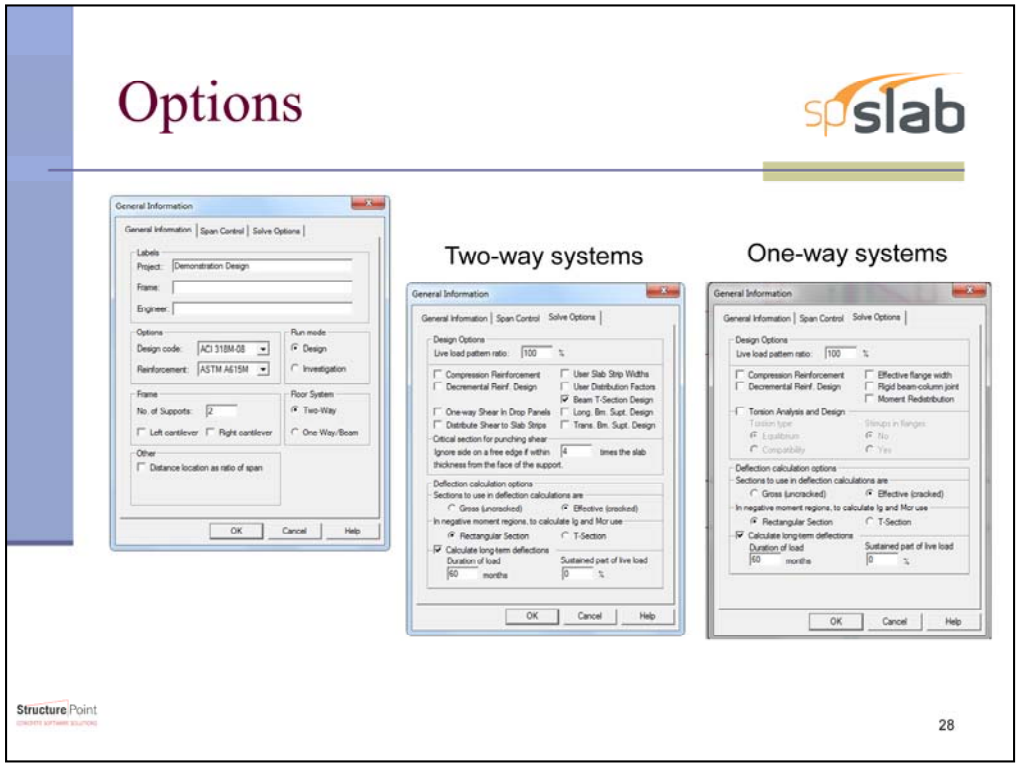
The SP Suite has the capability to design an entire concrete structure from foundation to roof. These programs are based on the methods, equations, and procedures found in ACI 318 and CSA 23.3 in English and Metric units. Due to the schedule of updating the concrete codes, the five code driven software are given a major upgrade every three years along with annual updates. The SP suite is designed to allow the user to work quickly, simply and accurately. In essence, you can get to a final design solution fast with confidence and little training and wasted time.



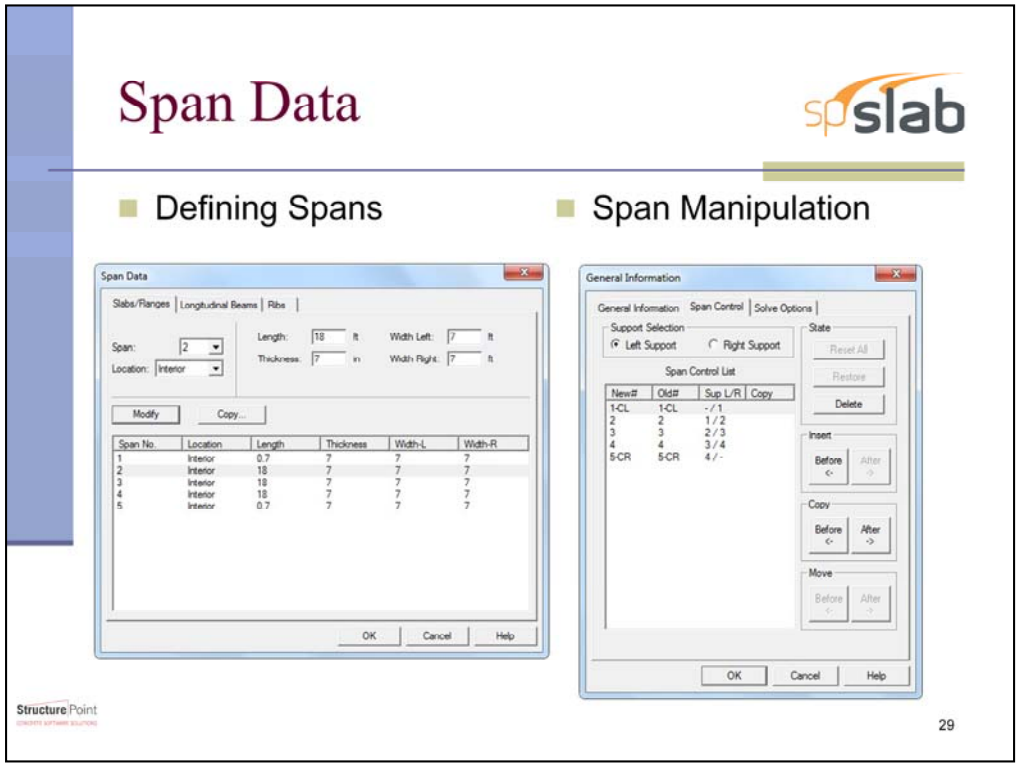
Use of the StructurePoint software can be found in many publications regarding reinforced concrete design and analysis.



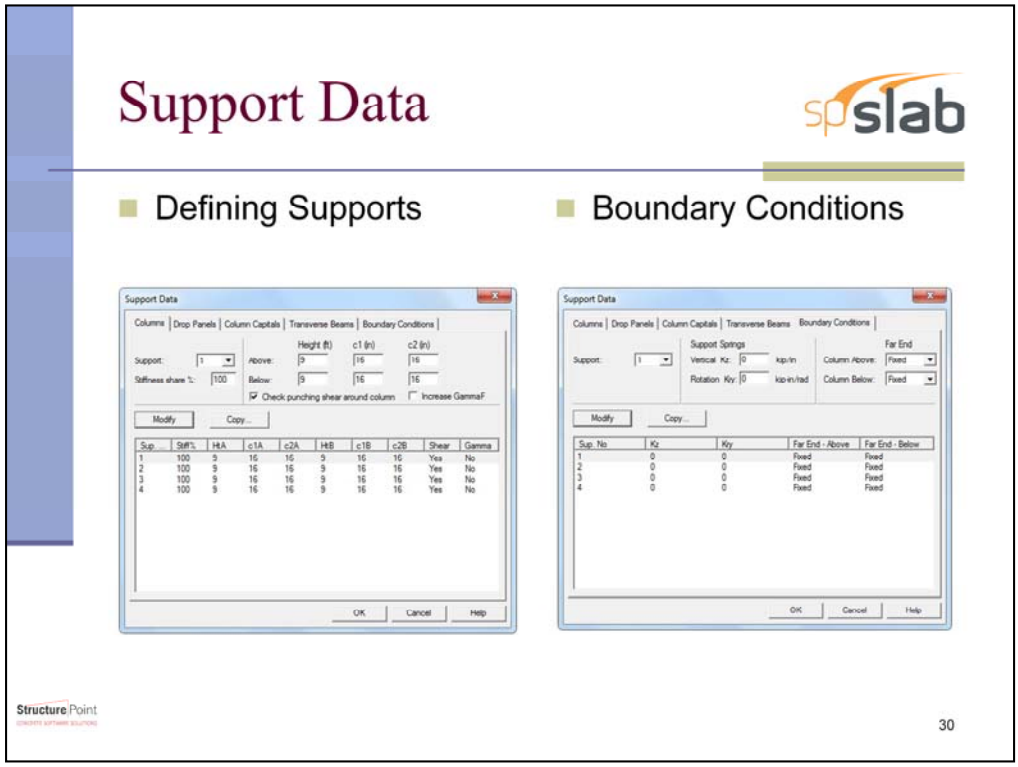
Formerly pcaSlab and ADOSS, spSlab was created for the analysis and design of reinforced concrete beams and slab floor systems. Two-way slab systems are analyzed using the Equivalent Frame Method. Beams and frames of up to 22 spans can be analyzed and designed. In addition to the design option, spSlab has the capability of investigating existing beams and slab systems. spSlab includes provisions for slab band systems as well as punching shear check and deflection calculations using either cracked or gross sections. For beams, moment redistribution as well as combined shear and torsion design are available. In addition to the required area of reinforcing steel at the critical sections, spSlab provides a complete bar schedule that includes the number of bars, bar sizes, and lengths.



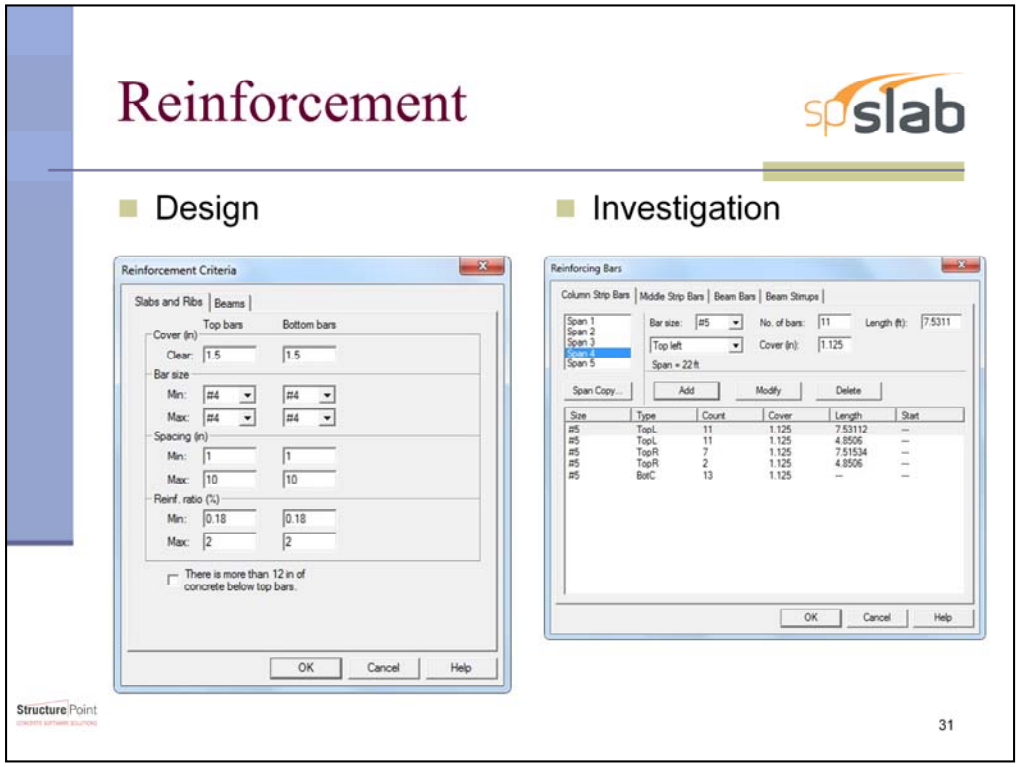
Floor systems are intricate with many choices available to an engineer. These choices are reflected in spSlab's General Information tab. From here the user has the option to choose which code and what edition to follow, the units, if compression reinforcement is to be used, what percentage of live load is sustained for long term deflections, and if transverse or longitudinal beams are included in the support design to name a few.



With the number of supports defined under General Information, spSlab automatically populates the Span Data dialog box with spans between supports and, if specified, cantilevered spans on the ends. The Span Data window allows each span to be given unique section properties. The Span Control window is a convenient way to edit entire spans. It allows for new spans to be inserted and existing spans to be duplicated, moved, or deleted.



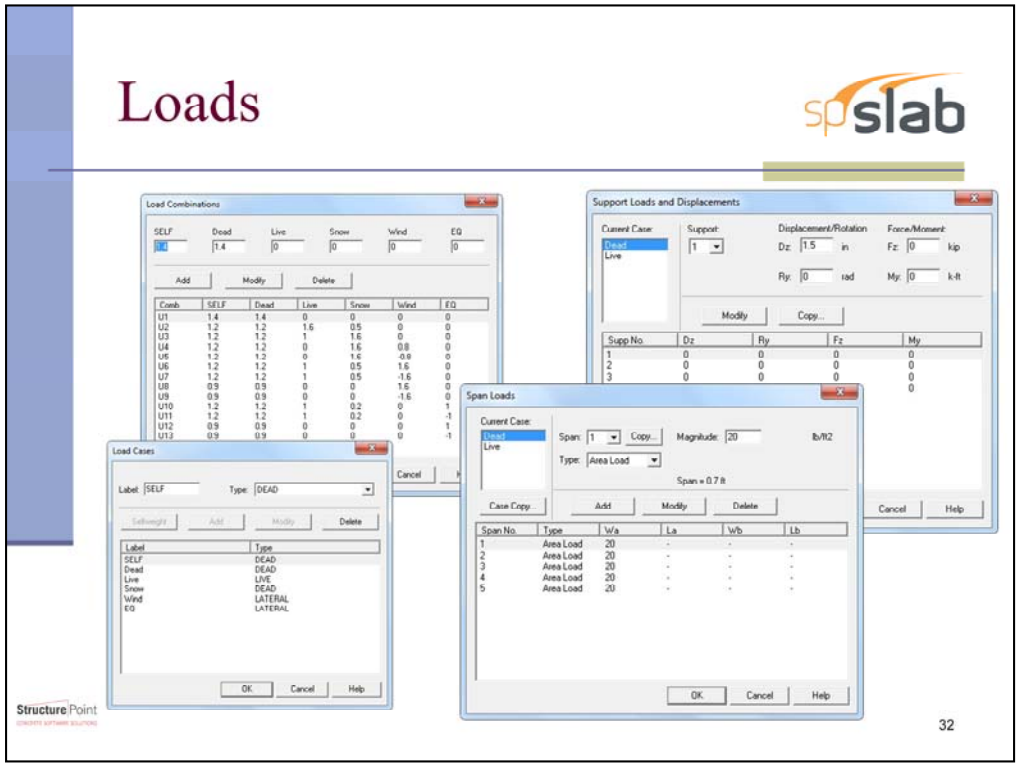
The supports dimensions entered into spSlab are used to determine the torsional stiffness of the system and to check the punching shear capacity of the slab system. The boundary conditions are used to simulate the conditions that the slab will experience at the supports. Adjusting these boundary conditions can be quite useful in creating a more realistic slab system than could otherwise be created. For example, since transverse beams can only be specified at the support locations this may cause a problem if there are transverse beams between columns that should be providing torsional stiffness to the system. The problem with this situation is that even if columns are given zero dimensions they still prevent vertical deflection. To bypass this problem, the supports can be given spring stiffnesses of negligible magnitudes. This will allow the system to act as if there is no column while including the torsional resistance of the transverse beams.



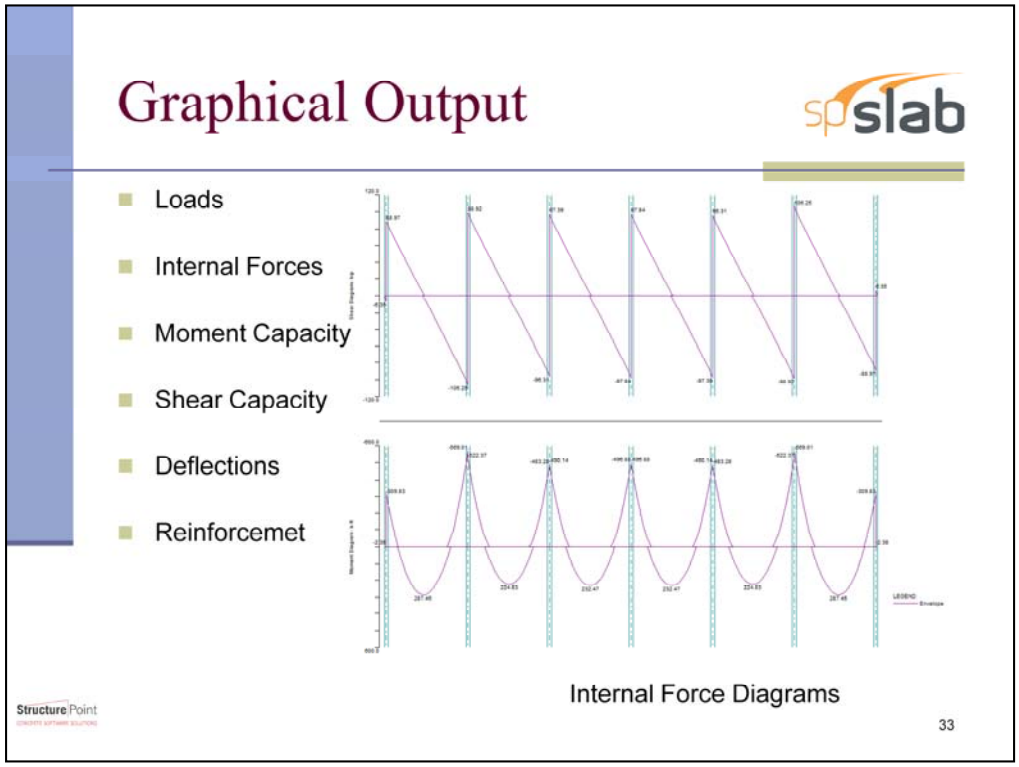
The choices for reinforcing change depending on the mode of spSlab being used. For the design mode the program takes user inputs for clear cover, the range of bar sizes, the minimum and maximum spacing between bars, as well as the minimum and maximum reinforcing ratio.

For the investigation mode, the bar size, number of bars, and their length are inputted as well as their location within the slab. For the horizontal position, the user can choose to either make the bars continuous across the bottom or top of the span, specific to just the left or right top of the span, or discontinuous through the bottom.

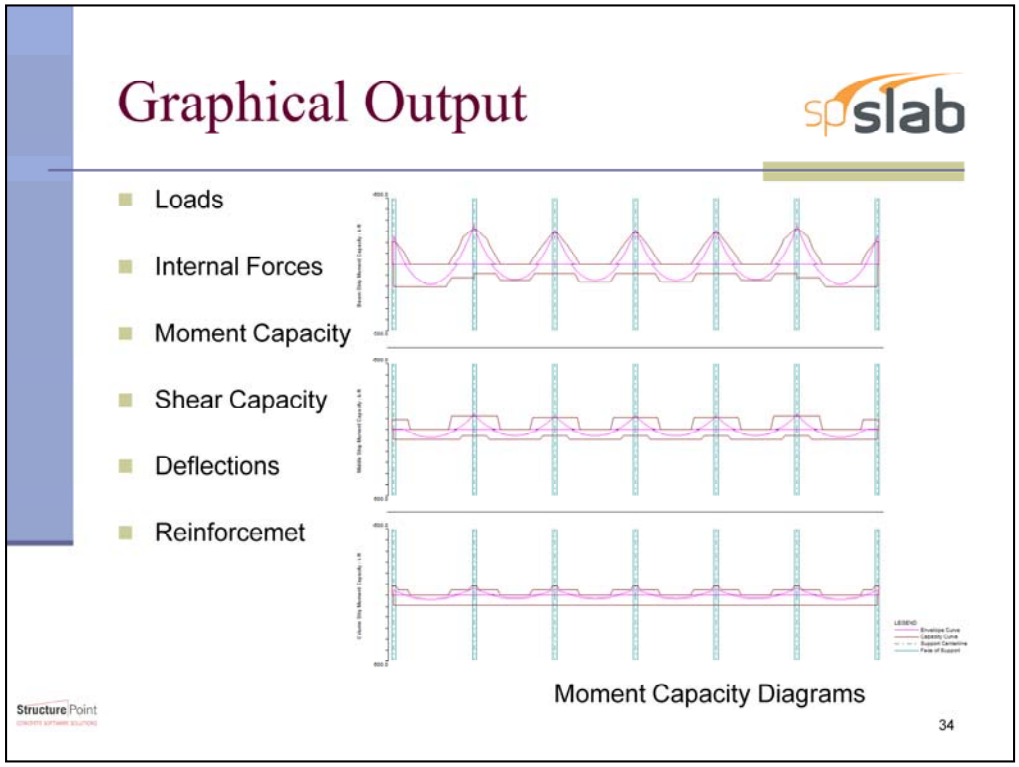
When performing the calculation of limits of reinforcing spacing spSlab accounts for the bend in the transverse reinforcin . Assuming that the bar makes contact at the middle of the bend gives a more accurate calculation of reinforcing spacing.



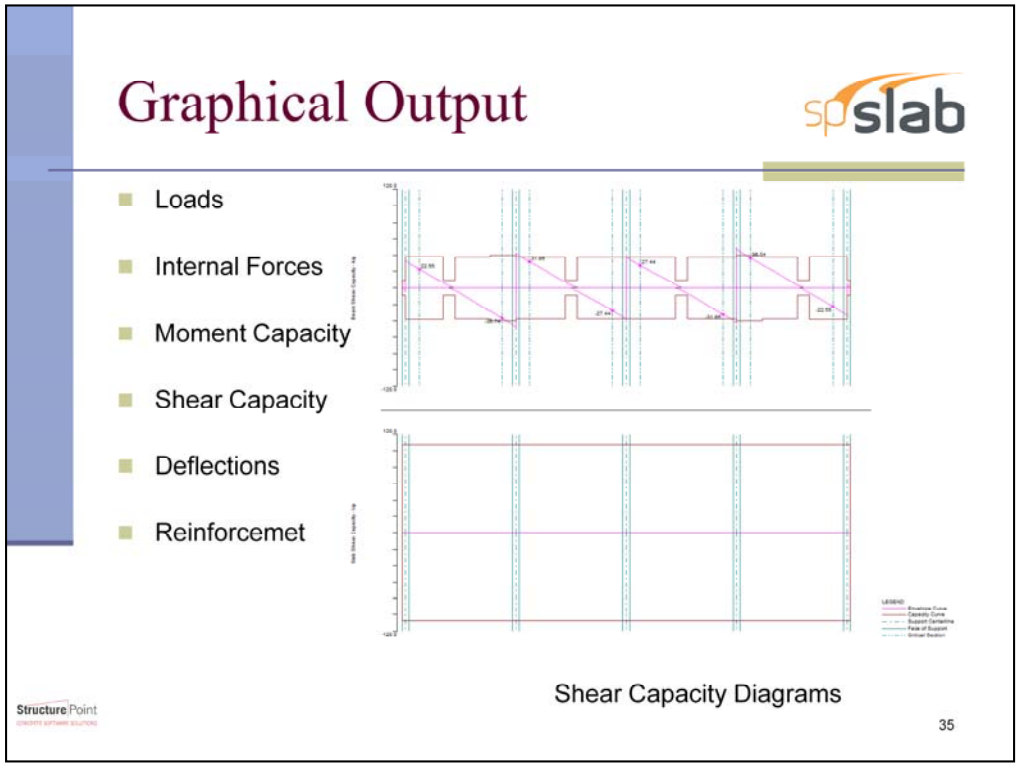
The user has load input choices of area loads, line loads, and point loads. These loads are designated a label to identify them and allow them to be factored. The system can be further modified to include concentrated forces on the supports along with prescribed support displacement and rotation. spSlab accounts for lateral loads as well by modeling them as moments acting on the ends of a span.



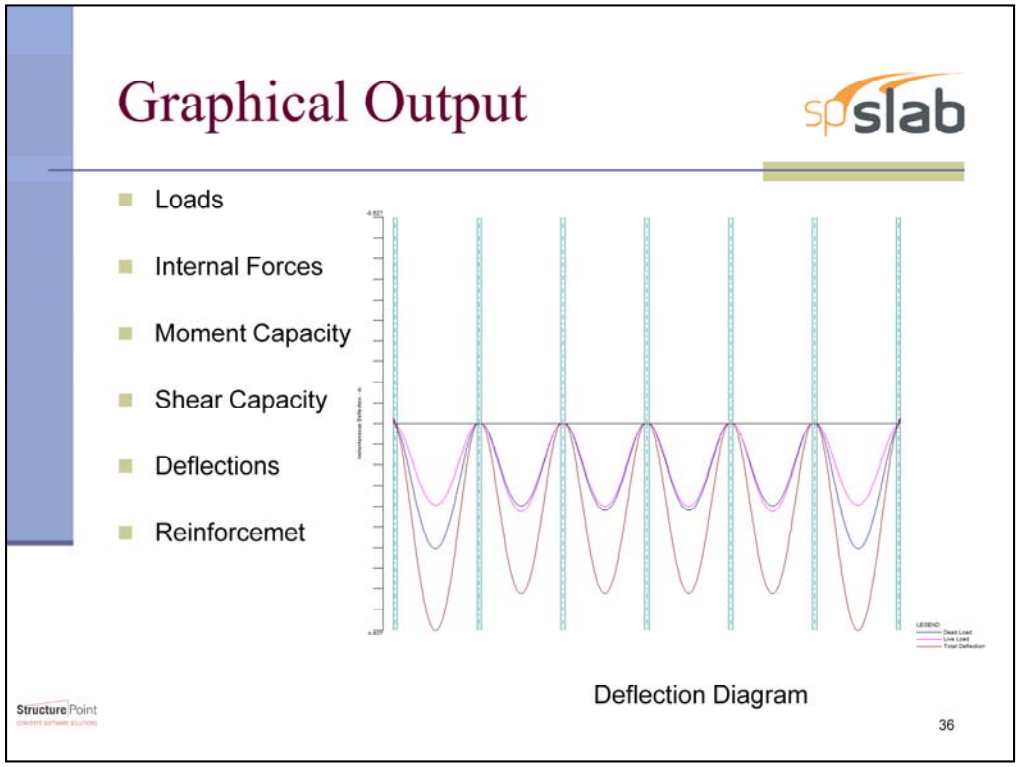
With all of the inputs completed spSlab will provide the user with a graphical output of the loads acting on the system, the internal forces, the system's moment and shear capacity, the deflections, and the required reinforcing.



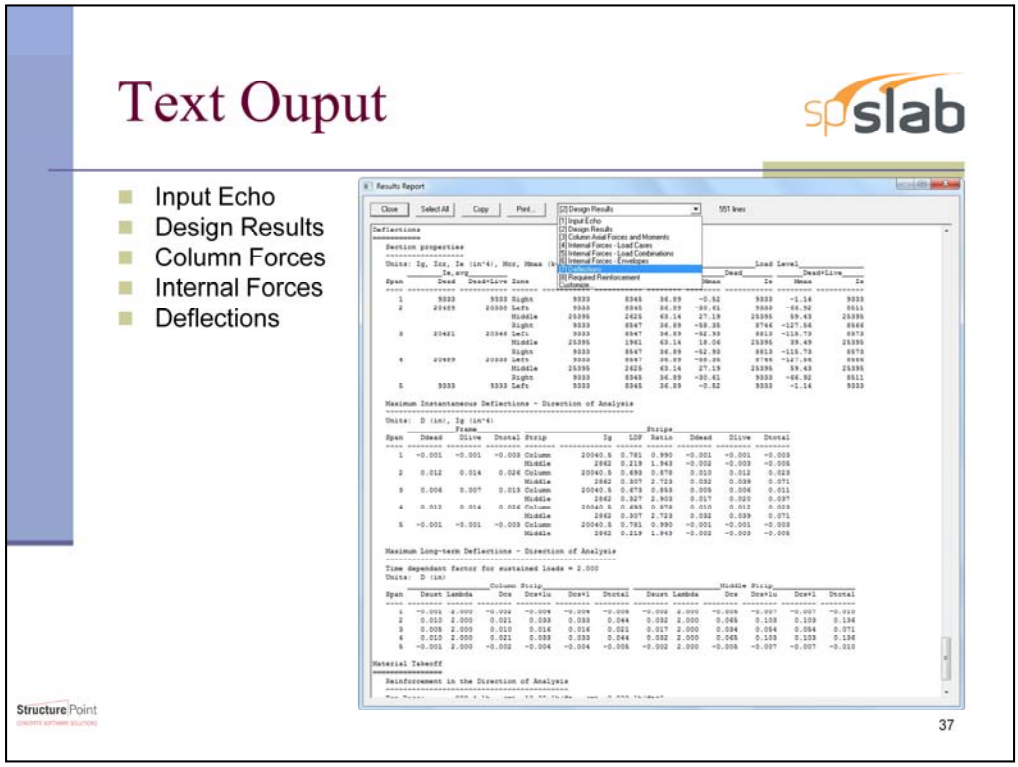
The moment capacity diagrams include individual results for the beam strip, the column strip, and the middle strip.



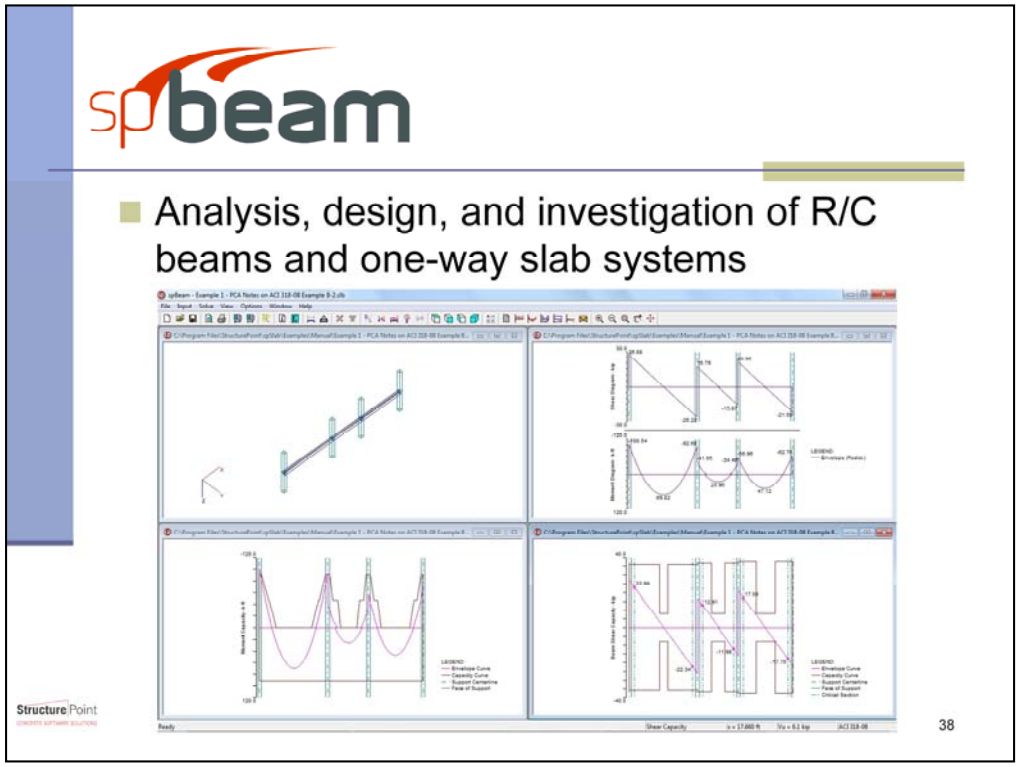
The shear capacity diagrams include the results for both the beam and the slab.



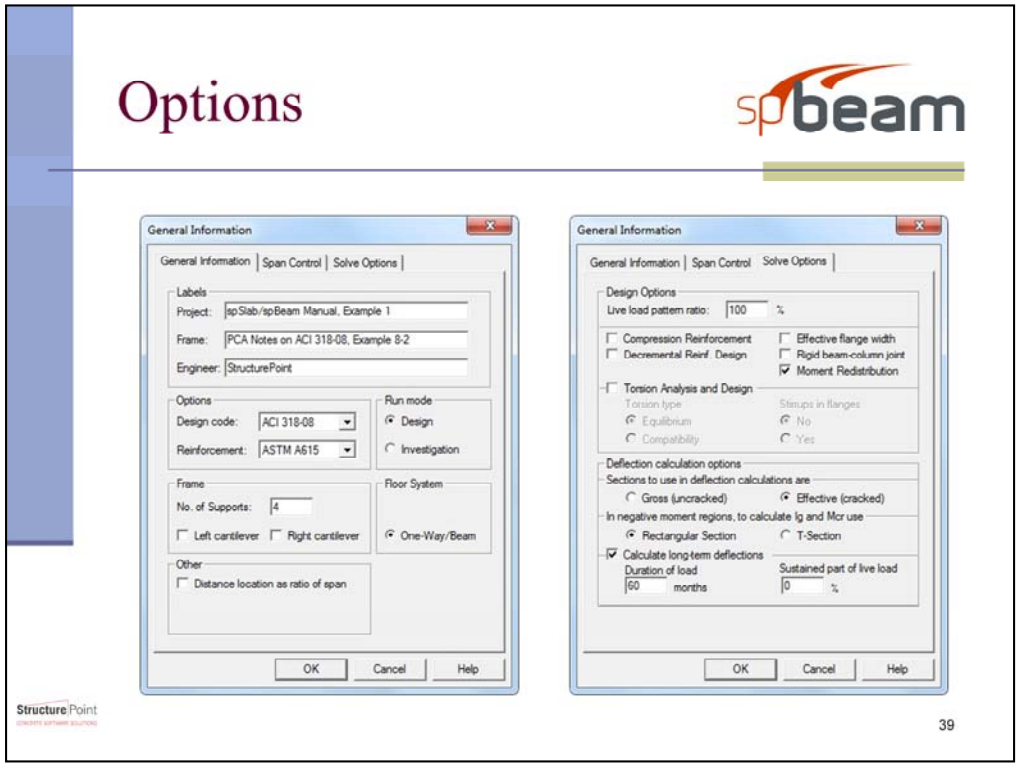
The deflection diagram displays the dead load, live load, a total deflections. Due to spSlab's capability to adjust the percent of live load sustained and time duration for long-term deflection calculation, the program allows for quick checks of ACI 9.5 – Control of deflections.



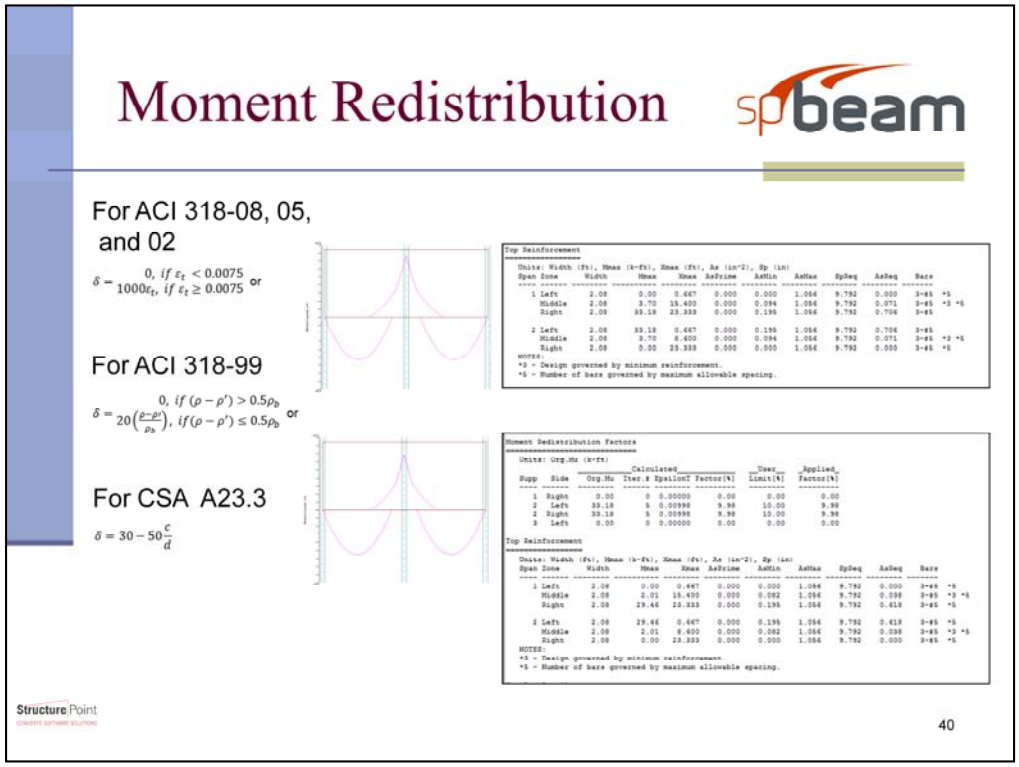
spSlab will also create a text based Results Report when the file has been solved. The report is split into an Input Echo, Design Results, Column Forces, Internal Forces, and Deflections. Each of these screens can be printed or saved individually or by using the Customize tab some or all of the sections can be combined into a single document.



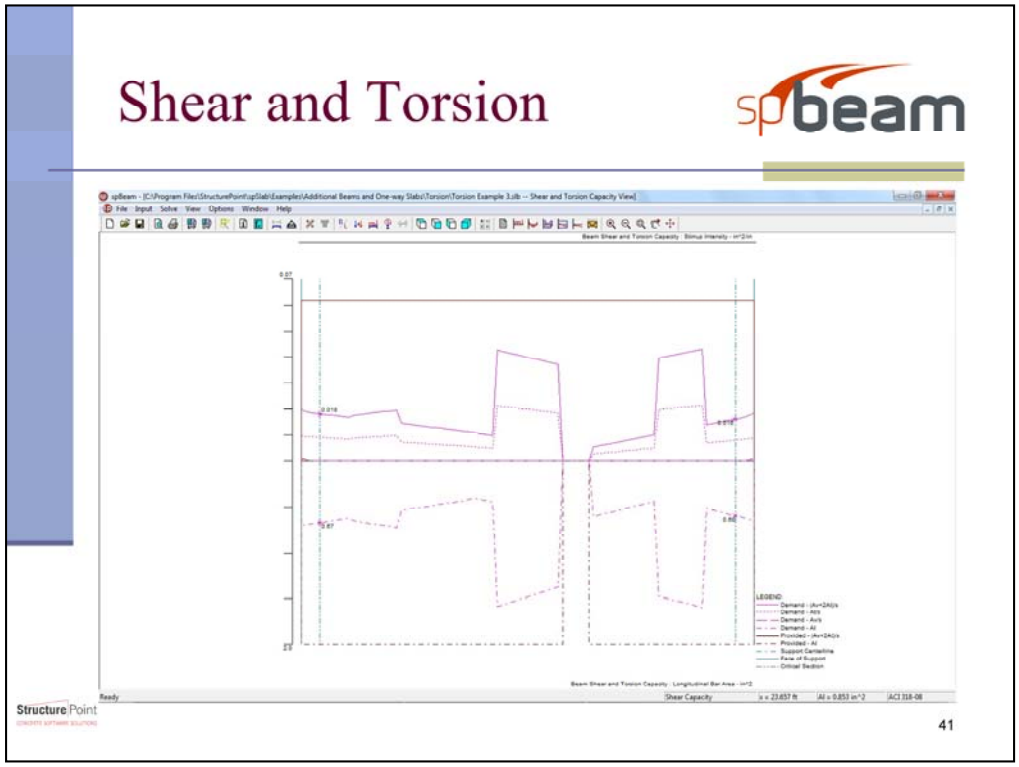
spBeam is a limited version of spSlab. It includes all the elements of spSlab that apply to beams and one-way slab systems. In this program, beams and slabs up to 22 spans can be analyzed and designed. Moment redistribution as well as torsion and shear design are available for beams. In addition to providing the area of reinforcing steel at the critical sections, spBeam provides a complete bar schedule that includes the number of bars, bar sizes, and lengths.



spBeam's options are similar to spSlab's, but notice that it forces the user to design the floor system as a one-way system. Beyond this, the options are identical to spSlab's one-way stem options.

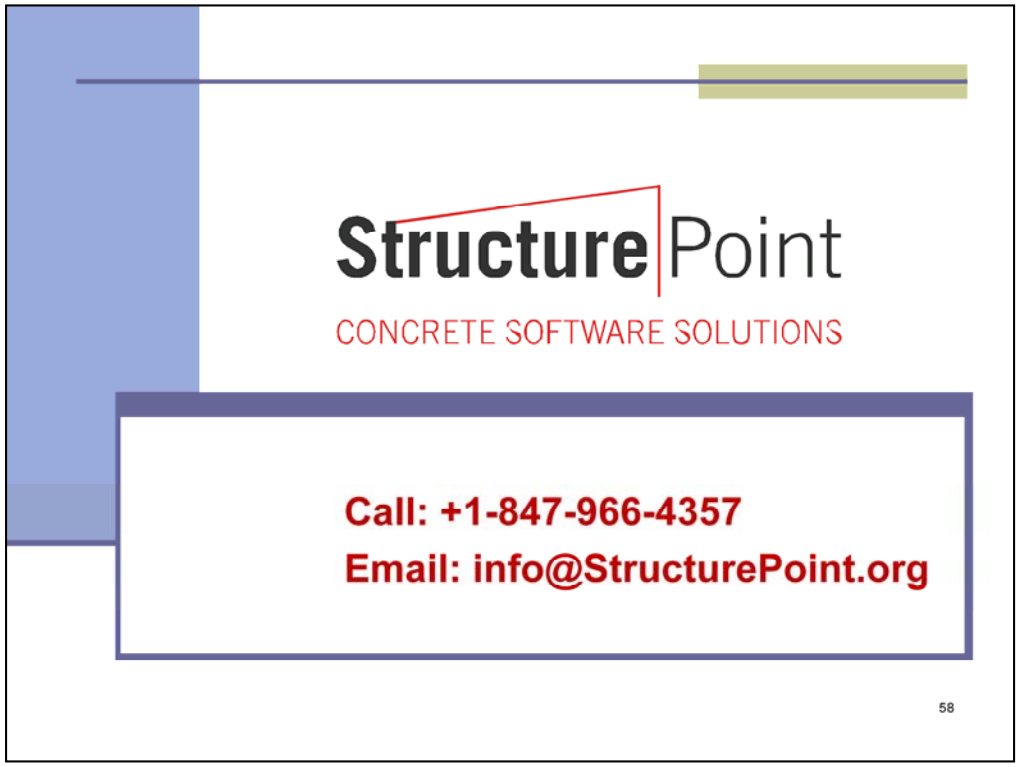


The moment reduction option is available for all editions of both the CSA and ACI code. By using the equations shown, spBeam will allow for the reduction of negative moments. The results for a one-way system with the moment reduction option enabled displays the calculation procedure including the original moments and the percent factored.



With the torsion option engaged, both shear and torsion contribute to the required transverse reinforcing. The torsional design is based on a thin-walled tube, space truss analogy. Either the equilibrium or compatibility torsion conditions can be applied. The capacity diagram as well as the text report split the required transverse reinforcing into that required for shear, torsion, and total capacity.

The moment redistribution and torsion design options are also available in spSlab.



StructurePoint would be glad to hear from you and receive your feed back as well as answer any questions regarding the program features, capabilities, price, and licensing options