
# USER MANUAL

## PLPak Version 1.01

## STRUCTURAL ANALYSIS SOFTWARE USING BOUNDARY ELEMENTS METHOD

## PLPAK basic tutorials

## Tutorial 23 – PLView input tables and .in input

CONTACT DETAILS:

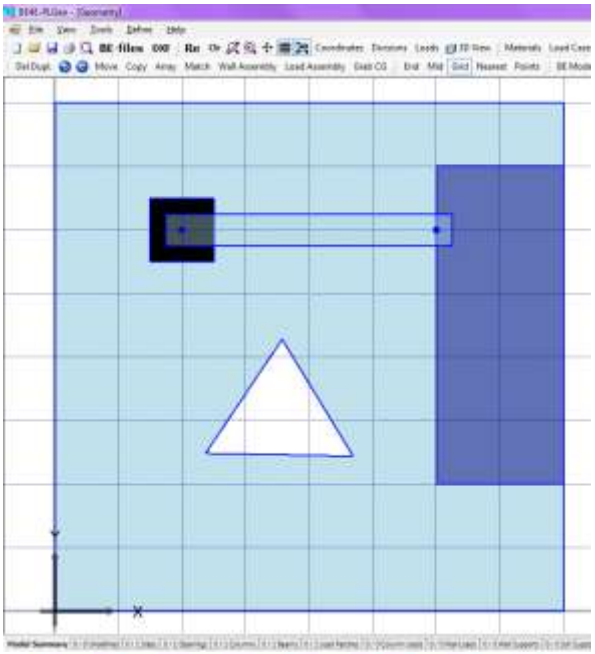
www.be4e.com

support@be4e.com

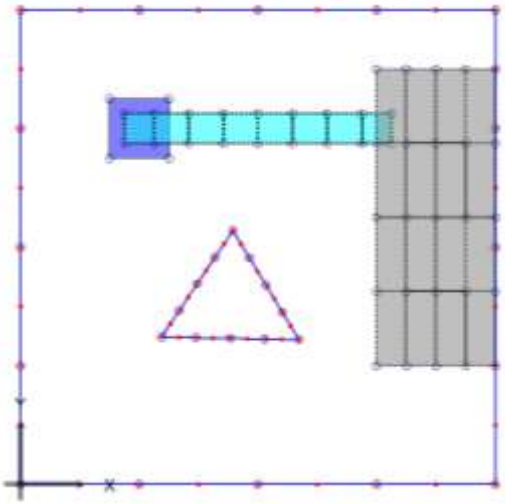
# Tutorial 23

The objective of this tutorial is to demonstrate how to use the input tables in the PLView.

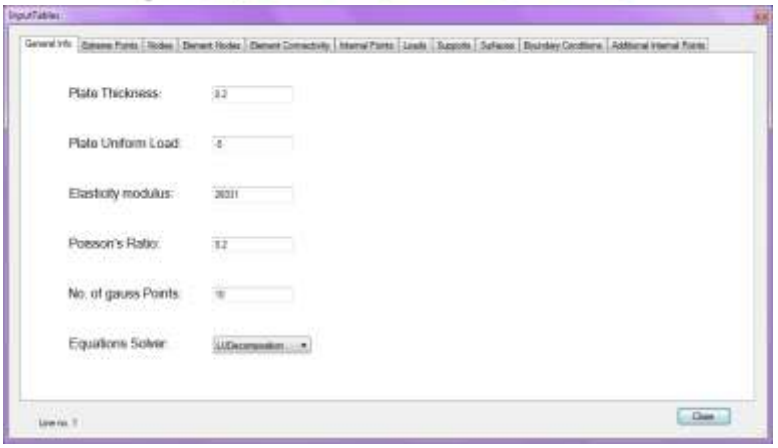
I – In PLGen, draw a slab, a column, an opening, a beam and a patch load.



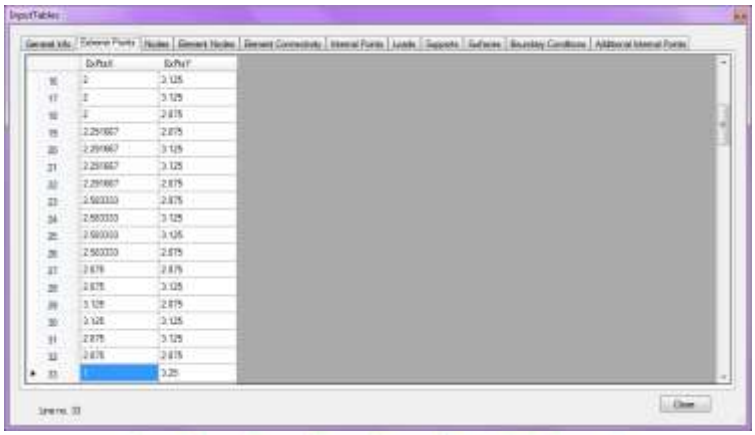
II – Click on BE model to open the file in PLView. Click on the input file button to open the input table. Enable nodes and extreme points.



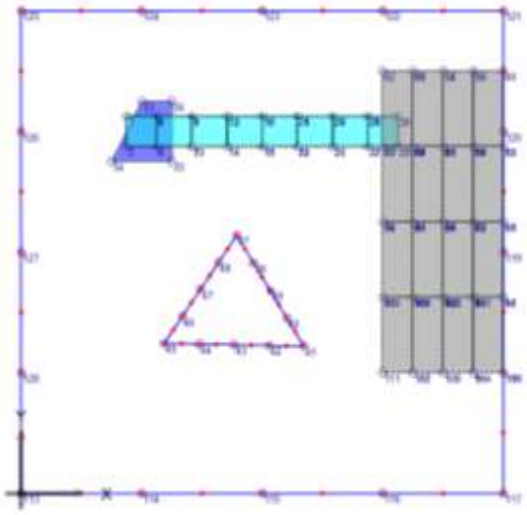
III – The shown window appears.



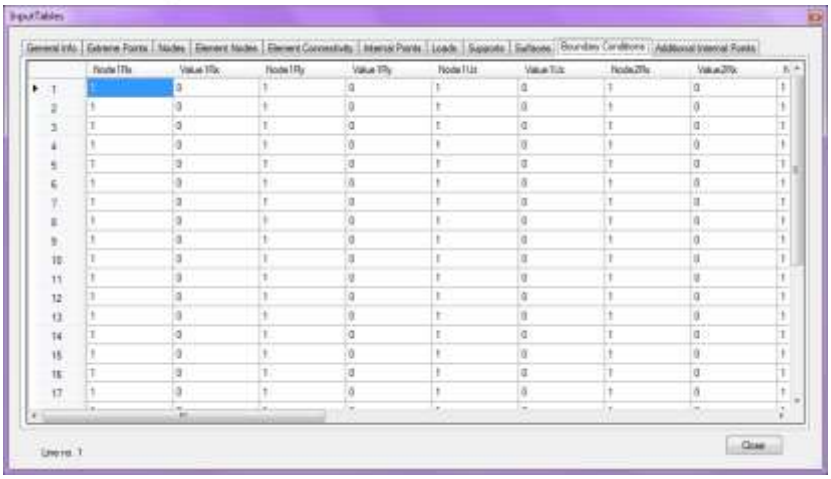
IV - The PLViewer can be used as an editor. The location of an extreme point can be changed. For example change extreme point 2.875 to a value 1. Discontinuous elements can be created by editing the coordinates of the extreme points through the creation of another extreme point.



V – The plot appears as shown.

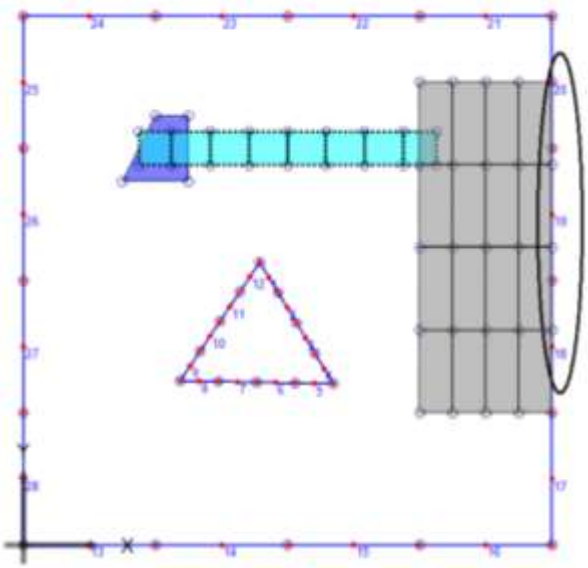


VI – Under the Boundary Conditions tab a boundary line load can simulate a glass panel or curtain wall that is on the edge of the slab and which thus puts a load on the slab.
There are two components for the three determinants of each node, the upward force $U_z$, and rotation about X and Y. The first column represents the node code, the node code can either be 0 or 1, 0 representing a fixed element thus the rotation $R_x$ is known, 1 represents a free element thus the traction is known, the second column for that determinant is $R_x$. $R_x$value is the value of $R_x$ or $M_x$. The second determinant is $R_y$, same case applies in terms of identifying the node, 0 representing $R_y$ is known, 1 representing that

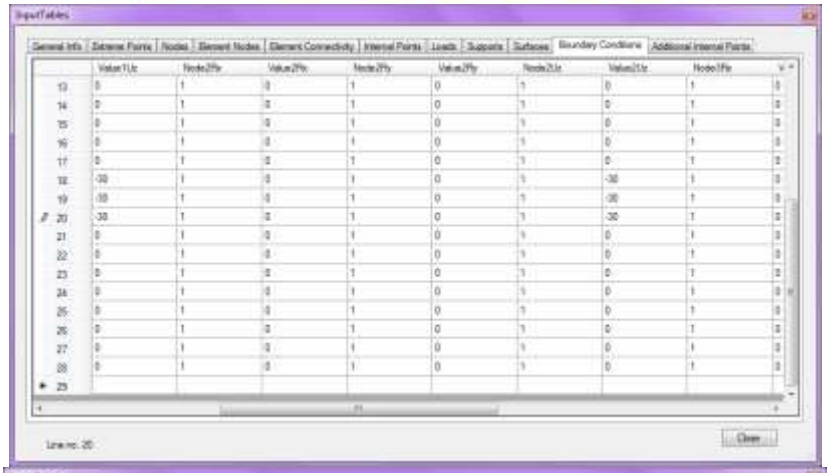


the $M_y$ is known. The last determinant is Uz, same case applies in terms of identifying the node, 0 representing U3 is known and 1 representing F3 is known.

V - To define a boundary condition, for example, place a line load of 30 kN/m along the side of the slab. First identify the elements so as to change the values accordingly. Take from element 18 to 20 for example.



VI – Change the Value1$U_z$ and Value2$U_z$ to -30.



VII - Change the Value3$U_z$ to -30 as well. Bear in mind that after editing the model in the PLView through the input tables and you go back to the PLGen, the data will that was adjusted in the input tables will be reset in the original model done in the PLGen.