Newsletter Vol.1 No. 8 August 2012

PLPAK NEWSLETTER

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Analysis & Design of Practical Slab

The BE4E consulting services Team (services@be4e.com) has recently participated in the structural analysis and design of a practical building (Slab area of 571.5 m^2) using the PLPAK & PLDesign. The irregular slab, shown in all of the figures, is demostrated in the step-by-step analysis revealed below. The procedure is initiated by slab model generation on the PLPAK (Figure 1) and completed by the illustration of straining actions (Figure 7). The PLDesign was use as in Figures 8 & 9 to design the analyzed slab. Figures 10 & 11 show samples of the design and detailing results produced from the PLDesign. The complete analysis and design processes took less than one working day from our services engineer.

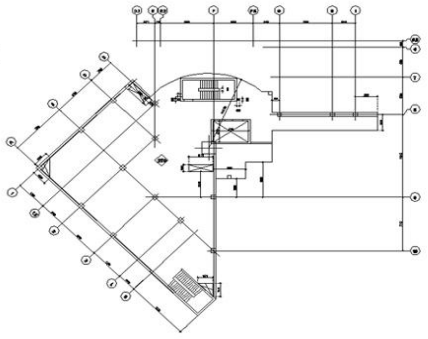


Figure 1: AutoCAD Drawing

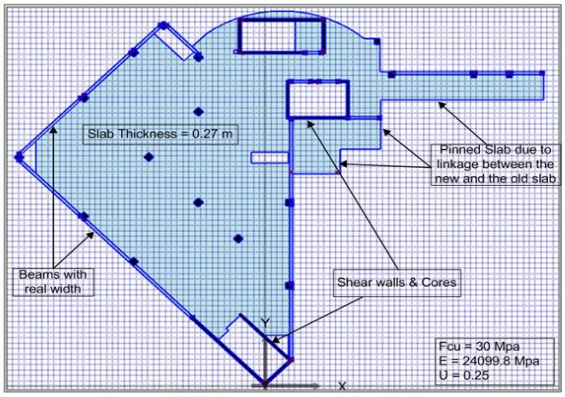


Figure 2: Slab generated by PLGen

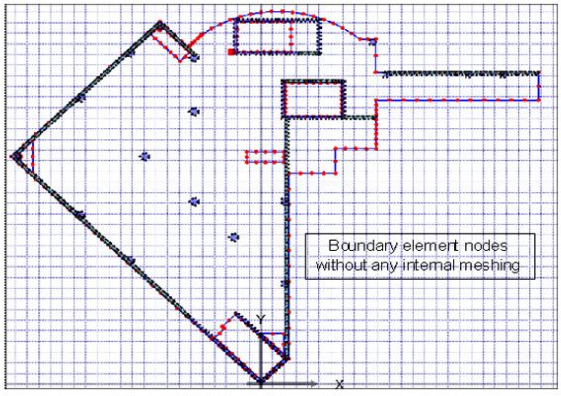


Figure 3 : Boundary elements nodes without internal meshing

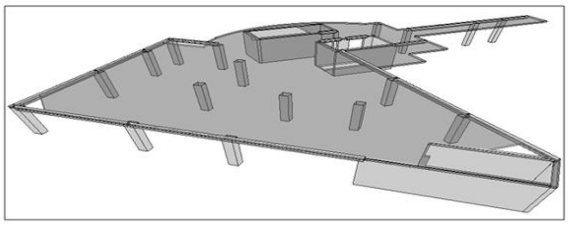


Figure 4 : 3D isometric view for the slab

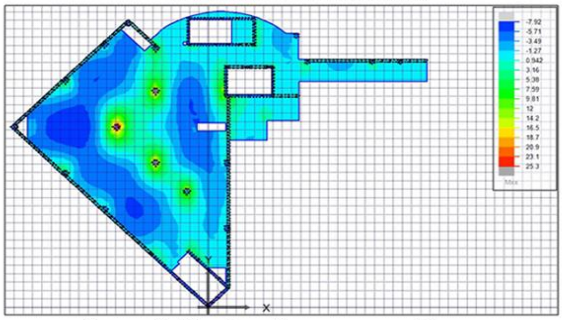
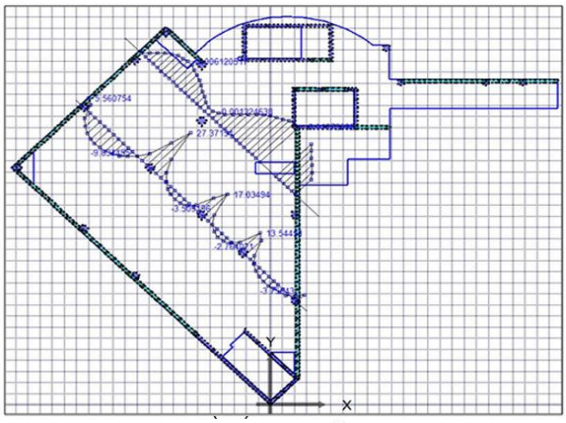


Figure 5 : Mxx Bending moment Diagram



bending moment in 45° degree (Mii).

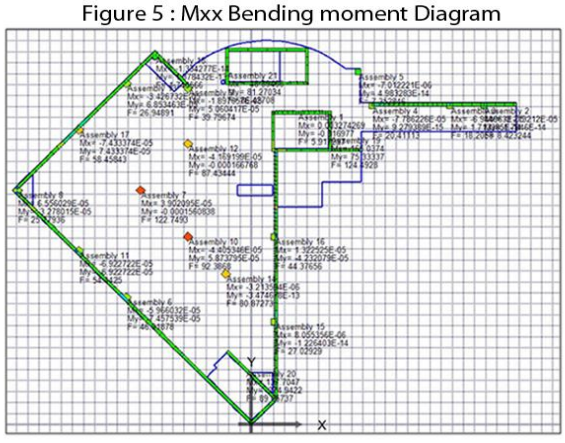


Figure 7 : Columns , Shear walls and cores Reactions

SPECIAL OFFER

Special prices are available exclusively for academics!

CONTACT:

Information about the PLPAK: info@be4e.com

Courses, seminars & consulting, webinars: services@be4e.com

Sales: sales@be4e.com

Research and developments: RnD@be4e.com

Customer support: support@be4e.com

DEVELOPMENT

The PLPAK software is in constant development to meet the needs of industrial and research purposes. Updates to the software will be posted monthly.

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You can now register on our website for more exclusive features related to boundary element analysis in structural engineering. Connect via this link: www.be4e.com , or you could use the following code on the right .

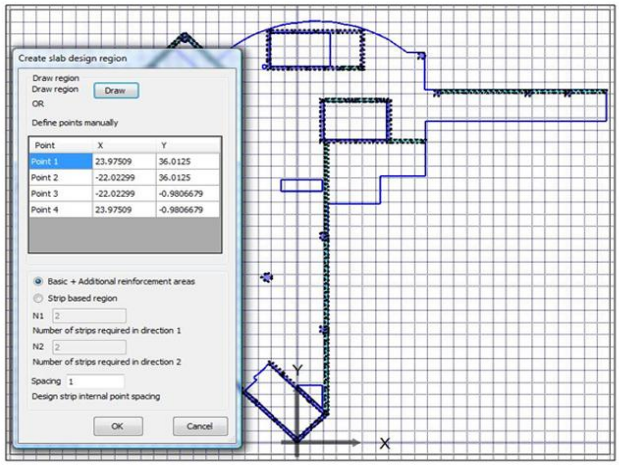


Figure 8 : Assign the Design area and define the type of slab reinforcement

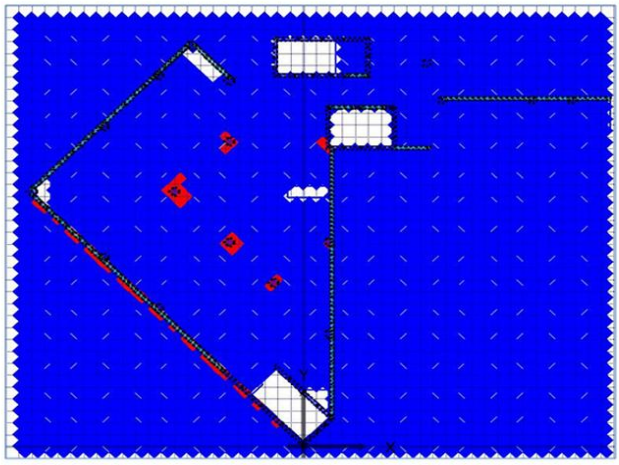


Figure 9 : The basic reinforcement that cover the slab (Blue) and the location of the additional reinforcement (Red)

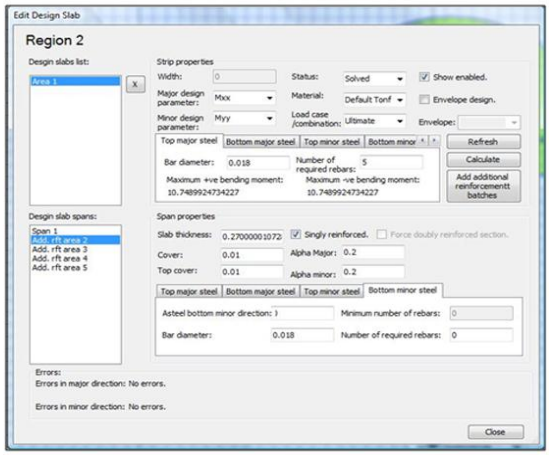
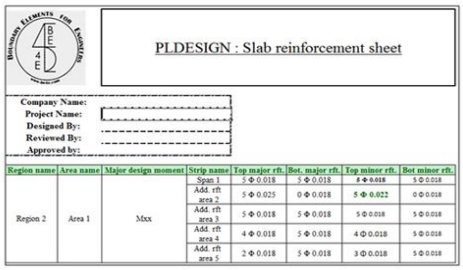


Figure 10 : Design Slab window shows the value of basic reinforcement and the values of additional reinforcement.



PLDESIGN : Slab reinforcement sheet

Company Name:
Project Name:
Designed By:
Reviewed By:
Approved by:

Region name	Area name	Major design moment	Strip name	Top major rft.	Bot. major rft.	Top minor rft.	Bot minor rft.
Region 2	Area 1	Mxx	Span 1	5 Φ 0.018	5 Φ 0.018	4 Φ 0.018	5 Φ 0.018
			Add. rft area 2	5 Φ 0.025	0 Φ 0.018	5 Φ 0.022	0 Φ 0.018
			Add. rft area 3	5 Φ 0.018	5 Φ 0.018	5 Φ 0.018	5 Φ 0.018
			Add. rft area 4	4 Φ 0.018	5 Φ 0.018	4 Φ 0.018	5 Φ 0.018
			Add. rft area 5	2 Φ 0.018	5 Φ 0.018	3 Φ 0.018	5 Φ 0.018

Figure 11 : The Exported Excel Sheet for the slab reinforcement

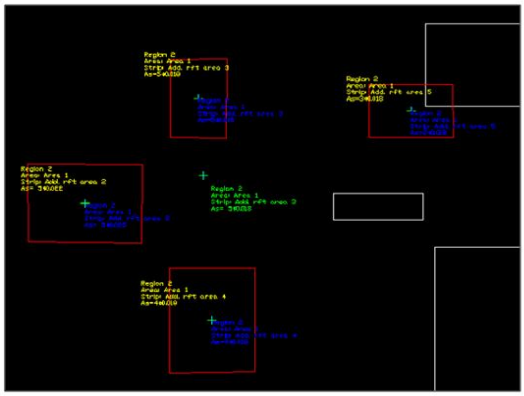


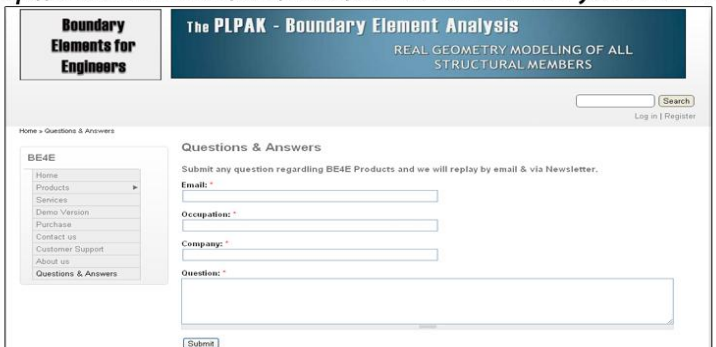
Figure 12 : Exporting the detailing of the slab which shows the basic and the additional reinforcement values and locations

PLPAK at NTUA, Greece

BE4E members had a visit to *Institute of Structural Analysis and Seismic Research NTUA*, Athens, Greece. Several meetings were held between the well-known Prof M Papadrakaikis of NTUA, Dr V Plevris and Prof Rashed (yrashed@be4e.com) of BE4E, Prof S Mehanny to discuss collaborative research work; the picture was taken during a family meeting between professors. Now,reseachers at NTUA have the PLPAK as a resource for the boundary element analysis of structures.

In need of more questions answered?

We are always on the alert to answer your queries and support your smooth transition to a better boundary element sense in analysis. Send us any queries or comments to our new [Questions & Answers] page and await our reply in the coming issue! *http://www.be4e.com/site/node/56* The form which you can fill out is shown betow:



Scan me for quicker acces!