

# LEED BY EXAMPLE W/ADVANCED POST-TENSIONING

## POSTEN ENGINEERING SYSTEMS

### POSTEN MULTISTORY V-8

#### LEED / Green Building / Sustainable Design

To some these are simply buzz words  
To POSTEN Engineering Systems it is being Professional  
But can you **SAVE MONEY** and be **GREEN?**  
We say **YES!!**

##### Background:

In a typical 150 ft. x 300 ft. Post-tensioned Concrete Slab, if you could reduce the thickness of the slab by 1", you would reduce the CO2 pollution produced by the manufacture of cement by the same amount of CO2 produced by 4 automobiles in one year.

Imagine, if at the same time, you could reduce the amount of steel used in that thinner slab, Saving Resources and Energy Use - All the way around.

Imagine further that since that slab is thinner, how much more efficient the design is. Seismic and Wind forces reduce with a lower building height. Or the Architect can maximize the use of the building within the height limitations, set by zoning requirements.

Imagine that the building costs **less to build**; and

Imagine that Structural Engineering Design fees are also lower.

##### The Usual & Wrong Way:

For Structural Engineers to design Green, normally means **Sharpening the Pencil**, using newer more time consuming design methods, using very expensive software packages and, in some cases, new structural systems with limited or no performance background.

Design Services tend to be Costly,

Construction Costs may be high,

Testing and Inspections may be extensive.

With new untested systems Construction Liability may go up.

Adequate Documentation for LEED may be challenging. **AND YET**

**Sustainable Design produces more efficient buildings and does not have to cost more.**

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##### How Do We Do It?

To establish a base line, we produce a quick Conventionally Reinforced Concrete design using our program CONCRET.

Then, we produce a Post-tensioned Concrete Design with POSTEN, which is **Efficient** (as opposed to our competitors' merely code compliant designs). Utilizing POSTEN's proprietary "Slab Optimization" algorithms this run ALSO makes sure that the **thinnest section** of concrete slab possible is designed.

Then using POSTEN's proprietary "Stress Balancing" algorithms, we then **AUTOMATICALLY** produce the **Most Efficient Design Possible**. This output also Automatically prints out how much steel is saved in the process.

At each stage, POSTEN Multistory produces Batched Tendon & Rebar Schedules, documenting the amount of steel used (i.e. saved) along the way.

All of this is done (including the documentation for LEED) in a **FRACTION** of the **time** that our competitors produce an inefficient, simple code compliant design.

