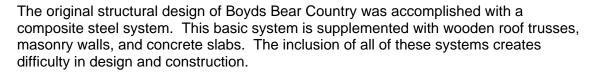


Conclusions

Boyds Bear Country Pigeon Forge, TN

Conclusions:

Summary



A pre-cast concrete system can be implemented to replace the current one, reducing the number of required trades on site. This design includes fewer pieces, and larger bay sizes, opening the retail floors up for maximum utilization of space. However, the concrete does not fit the overall aesthetic design of the building and would have to be masked in a fashion similar to the existing structure.

An engineered wood system allows for the most seamless integration of a structural system into the desired aesthetic design. The application of wooden columns and girders creates a look of nature and tradition applied in an updated, oversized fashion. The implementation of a wooden system would create a greater number of columns in the floor plan and retain area; however they could be incorporated into display functions.

Both replacement systems show a decrease in cost and construction time.



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Comparison of 3 Systems

Area of Concern:	Original Composite Steel System	Pre-Cast Concrete System	Engineered Wood System
Gravity System	30' x 30' Bays	30' x 45' Bays	22.5' x 30' Bays
	3 Beams per Bay	2 Double-Tees per Bay	Joists at 2' OC
	O subjection of	Decreased Number of Columns	Increased Number of Columns
Lateral System	Combination of Steel Frames and Masonry	Pre-Cast Panels	Pre-Cast Panels
		Decreased Number of Members	Decreased Number or Members
	Seismic Controlled	Seismic Controlled	Wind Controlled
	2.08" Deflection	0.174" Deflection	0.461" Deflection
Foundations		~15% Larger by Volume Less Formwork required	~25% Smaller by Volume More Formwork Required
Cost / Schedule / Coordination		\$78,800 Savings	\$1,420,00 Savings
		Decreased Construction Time Less Site Construction Required	Decreased Construction Time Less Site Construction Required
		Fewer Contractors Required	Fewer Contractors Required
Architecture		Reduced Number of Columns Finish Work Required	Higher Number of Columns Less Finish Work Required

Recommendation

It is recommended that the pre-cast structural system be utilized in the design of Boyds Bear Country in Pigeon Forge, Tennessee. This option creates a streamlined structural system with larger bays, fewer columns, and decreased number of required materials, a decreased amount of site work, and an overall savings of more than \$78,800.

Advisor: IVI.K. Partitt

Boyds Bear Country Pigeon Forge, TN



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- 4. Photos courtesy of iLevel.
- 5. Photos courtesy of Boyds Bear Country.

Lauren Wilke Structural Option

Advisor: M.K. Parfitt

Boyds Bear Country Pigeon Forge, TN



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