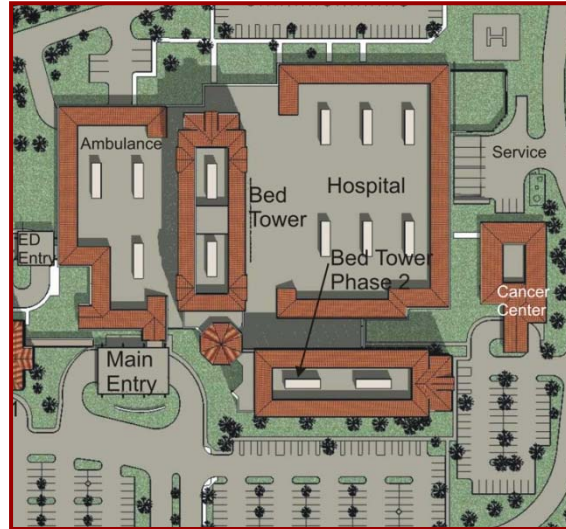


Executive Summary

The Temecula Medical Center is a proposed 6-story hospital which features a 2-story Drug and Therapy center (D&T) as well as a 6-story bed tower. Labs and research space is located in the D&T while the examination and patient rooms are placed throughout the 6-story tower. Parking is located around the hospital, leaving space for future development of the area. As designed, the hospital would include 295,100 sq. ft. of space and rise 106'-8" above grade. While the design was approved in May, 8th, 2008, economy and budget problems have forced the construction to be put on hold. Shown in the image is the site plan which includes the proposed building as well as possible future additions.



The structure of the Temecula Medical Center was designed as a two-way, flat-plate concrete system, with a series of concrete shear walls to resist the strong west coast lateral loads. This report investigates the feasibility, cost, and schedule changes associated with changing the bed tower structure from concrete supported to a composite steel system with concentric braced frames. Many conservative assumptions were taken during the original design of the structural system, predominantly because of the location as well as hospital category.

The new composite system was designed using ASCE 7-05 and IBC 2006, with the assistance of a RAM structural model. The results consisted of W16 beams framing into W18 girders on typical floor layouts. The loads from the floors were carried to the foundation through W10 and W12 columns. Braced frames to resist the heavy lateral loads consisted of wide-flanged columns (W12) and beams (W8 and W16). Rectangular hollow structural sections were used as concentric diagonal bracing, with HSS14"x6"x3/8" being the typical size used. While this size would normally be considered small, the multiple locations help resist the horizontal loads.

A construction management breadth study was performed in order to determine the cost and schedule implications of the new steel structure. The new system was

estimated to cost approximately \$1.69 million less than the original concrete system, while being completed almost three months sooner.

Original plans for the Temecula Medical Center consisted of small windows surrounded by a plaster façade on the exterior. An architectural breadth study explained later in this report detailed a change from the existing façade to a



predominantly glass curtain wall. Glass would allow more light into the interior as well as reduce heating requirements in the short winters. Due to the hot climate in Temecula, CA, extensions will need to be added between floors to help shade rooms from the intense summer sun rays.