



**meline** engineering

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Meline Engineering is a licensed engineering and consulting firm that specializes in:

Energy efficient mechanical system design

Geoexchange system design and construction support

Plumbing systems design

Design reviews

Feasibility studies

Documentation for LEED Certification

**Lisa Meline's  
Upcoming Speaking  
Engagements:**

**2011 ASHRAE  
Winter Conference**

**ASHRAE Sacramento Valley  
Section, "Geothermal Heating  
and Cooling,"**

**University of California, Davis,  
Extension Program,  
Geothermal Energy  
Systems: Overview**

For more information on upcoming speaking engagements or services provided by Meline Engineering visit:

[www.meline.com](http://www.meline.com)

# Meline Engineering Corporation Newsletter



## In the News...

Meline Engineering staff would like to welcome you to 2011. In this issue we will be highlighting the new California Building codes. As of January 2011, California will enforce the new 2010 California Building Codes. All projects submitted for permit application on or after January 1, 2011 will need to show complete compliance to these new codes.

### 2010 CODE REQUIRED

- \* California Building Code, Vols 1 & 2
- \* California Plumbing Code <sup>(2)</sup>
- \* California Electrical Code
- \* California Green Building Code
- \* California Fire Code
- \* California Green Building Code Provisions – **new!** <sup>(4)</sup>
- \* California Residential Code – **new!** <sup>(1)</sup>
- \* California Mechanical Code <sup>(2)</sup>
- \* California Energy Code <sup>(3)</sup>
- \* California Reference Standards Code

(1) There is a new California Residential Code applicable to detach one & two family dwellings. This regulation will be covering all structural conventional construction and non-structural related designs of dwelling construction. (2) The International Association of Plumbing and Mechanical Officials Uniform Codes from 2006 serves as the base for the CPC and CMC. (3) The 2010 Energy Conservation Code remains very similar as its predecessor code. (4) New CAL Green Code is a separate document applicable to all new residential and non-residential constructions. It introduces sustainable construction practices in planning, design, energy, resource and water efficiency, material conservation and environmental quality. It specifies the minimum required Green Building Standards.

## About the Picture Above

This was a custom residential project located on a sprawling parcel in the hills of Santa Clara County. The project included the main structure of approximately 18,000 sq ft, a cabana of approximately 800 sq ft an accessory building approximately 1030 sq ft. The desire of the owner was to install an energy efficient heating and cooling system the employed radiant floor and forced air. A vertical bore geoexchange system was chosen to provide radiant floor heating, domestic hot water heating, pooling, and forced air heating and cooling. Incorporating a geoexchange vertical loop borefield in the mechanical system provides a higher operating efficiency for the heating and cooling equipment and removed any exterior mechanical equipment such as air cooled condensers. The main structure was tied into a borefield of 43 vertical boreholes drilled to a depth of 300'. The accessory building operated on a separate borefield of 3 vertical boreholes drilled to a depth of 300'.

### Project Highlights:

- (46) Vertical boreholes 300' deep
- (12) Water to Air Geoexchange Heat Pumps
- (5) Split system Geoexchange Heat Pumps
- (5) High Velocity Fan Coils
- (1) 3000 cfm Dehumidifier
- (6) 120 gallon Storage Tanks

Meline Engineering Corp., PO Box 276665, Sacramento, CA 95827

(916) 366-3458