Exhibit E
Solar Opportunities Information

MEMO

Date: 1/5/09 Project No.: 07035.00

To: Lori Salamack
Planning Director, Town of Moraga
and
Debi Chung
Project Manager, Richfield Investment Corporation

Project Name: Palos Colorados

From: Scott Rivers Cc.:

Regarding: Palos Colorados – Opportunities for Passive or Natural Heating and Cooling

Lori,

As required by the Vesting Tentative Map (VTM) Conditions of Approval (specifically item "C.VTM.40") we have provided feasible opportunities for passive or natural heating and cooling within our project. These features also comply with conditions noted within the Palos Colorados Design Guidelines (refer to "Section 5.2, Energy Efficiency"). The following is a list of these opportunities:

1. **Passive or Natural Heating:**
   A. Lot Orientation – East-West Alignment – Most of our lots have been oriented with an east-west alignment to offer maximum southern and southwestern exposure. Referring to our site plan, 78 out of the 123 lots (63% percent) have this condition (Lots 1-24, 29, 49-65, 76-77, 88-102, 104-123). This southern exposure can be utilized within a home design to provide passive/natural heating.
   B. Lot Orientation and Prototype Designs – Potential for Photovoltaic Solar Power – All of the lots are sufficiently exposed to allow for future photovoltaic installations. All of the prototypes we have designed have low-profile roofs which can accommodate a photovoltaic installation. This conclusion is based upon a 400sq.ft. solar panel installation on a roof location that is not visible from the street or adjacent neighbors. The electricity generated from a photovoltaic installation can be used to offset heating and/or cooling expenses.
   C. Building Orientation and Prototype Designs - Courtyard homes – All of our prototype homes have courtyards integral to the design, either partially or fully-enclosed. These courtyard homes have more exposed surfaces/elevations, than a typical "box-shaped" home. As a result, our designs substantially increase the amount of exterior wall surfaces and maximize opportunities for passive solar heat gain. It is also important to note that most of our prototype homes are designed with living spaces oriented towards the south side of a property; garages are placed towards the north side of the home.

2. **Passive or Natural Cooling:**
   A. Shading Devices – Covered Porches, Loggia, Trellis and Landscaping – All of our prototype homes feature shading devices to reduce solar heat gain. Covered porches, loggia and trellises are integral features of our designs. Most often, they are constructed adjacent to large expanses of windows and/or glazed doors. We also propose thoughtful tree placement on each lot to supplement built shading conditions. For example, deciduous trees will be placed on the south and west sides of homes to provide needed shade in the summer months.
   B. Hillside Site – Using Prevailing Breezes for Ventilation – The hillside contours of the site result in more active air movement through the lots. This feature activates the cross-ventilated room conditions built into our prototype home designs to provide passive/natural cooling.
   C. Prototype Designs - Courtyard Homes - Our courtyard homes provide more opportunities for passive/natural ventilation than a typical "box-shaped" home. Having courtyards allows for more exterior surfaces and more openings to the outdoors. As a result, most of our rooms have doors and windows on adjacent or opposing walls to promote natural cross-ventilation.

7585 Irvine Center Drive, Suite 200, Irvine CA 92618 Telephone 949.655.1550 Fax 949.655.1559 www.roberthidey.com

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www.robertthiley.com

We also intend to amend a small portion of text within the Palos Colorados Guidelines to further clarify and promote the passive heating and cooling opportunities we have listed above. This amendment will occur within the text in Section 5.2, "Energy Efficiency". For example, text referring to "overhangs on south windows" will be removed because this condition does not commonly occur within our prototype designs.

Please let me know if you have any questions regarding this memo.

Thank You,

Scott A. Rivers
Studio Director

Rabben/Herman
design office
Landscape Architecture Site Planning Urban Design

MEMORANDUM

Date: January 5, 2009

To: Lori Salamak – Town of Moraga, Planning Director
Debi Chung – Richfield Investments
From: Tom Skinfill

Re: **Palos Colorados - Proposed Amendments to the Design Guidelines To Address Passive Solar Heating and Cooling and Front Yard Landscape Installation Timelines**

In order to demonstrate compliance with Condition C.VTM.40, we are providing the attached exhibit, dated 1/5/2009 to clarify the "Passive Solar Opportunities" that have been incorporated in our PDP landscape Design Submittal, dated 4/22/08. This exhibit shall be added to the Design Guidelines with the following additions / revisions to include strategies for passive solar implementation on the project. The Guidelines shall be amended as follows:

A. **Add "Section 3.11 Passive Solar Heating and Cooling Strategies in the Landscape"** with text as follows:
"In addition to the Build It Green guidelines listed in Section 3.10, homeowners are strongly encouraged to incorporate Strategies for Passive Solar Heating and Cooling in the Landscape to reduce energy use and lower energy costs, provide natural seasonal shading of residences, and to limit heat gain of paving as well as roof and wall surfaces. When developing landscape approaches around the home, homeowners can achieve these goals by adopting the following strategies to the extent feasible:

a. On South-facing facades, plant primarily deciduous shade trees to shade walls/windows and roof areas to reduce summer heat gain and maximize passive solar heating in winter.
b. On West-facing facades, provide deciduous shade trees to reduce summer heat gain, while providing filtered sun during winter months to maximize winter solar heating.
c. On East-facing facades, limit tree plantings to maximize passive solar heating in winter.
d. On North-facing facades, limit tree plantings to maximize light exposure in both winter and summer.
e. On South or West facing walls where its not practical to do tree plantings, additional partial

shading of walls and windows, as well as hardscape paving areas can be provided by the addition of

833 Dover Drive Suite Nine
Newport Beach, CA 92663
p: 949.548.3459 f: 949.548.5743
em: toms@rhdo.com
CA Landscape Architecture License # 2985

pergolas or trellis structures.

f. For residences with swimming pools or spas, the use of swimming pool and spa solar blankets or pool covers are encouraged to reduce heat loss in winter and maximize passive solar heating in the summer, in addition to providing added pool safety."

B. **Add an additional bullet item to Section 5.2 - Green Principles; paragraph 2, "Community Design"** – under "potential opportunities for community design may include:"
"- Incorporate Passive Solar Heating and Cooling strategies as outlined in Section 3.11.

The exhibit illustrating Passive Solar Opportunities will be added after Section 3.11

C. **Revise "Section 3.2 Duty to Install Front Yard Landscaping"** to read as follows:
"Each homeowner shall complete installation of permanent landscaping within all "Street Frontage" areas within the property, as defined below;

a. Prior to the issuance of the Certificate of Occupancy OR
b. within 6 months of Occupancy. A bond will be required if a homeowner exercises this option.

For the purposes of this section, the term "Street Frontage" shall refer to any portions of the lot which abuts the street Right-of-Way and/or faces the Common Areas, and is between the R.O.W. and the side yard fences. For Corner Lots, "Street Frontage" refers to yard areas of the lot between the R.O.W. and side yard or rear yard fencing."

D. **Add Item Section 3.7 - Walls and Fencing as follows**:

" Applicant or Developer may opt to provide a 42" high maximum fence between the HOA-maintained Wetband and homeowner-maintained yard ."

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Newport Beach, CA 92663
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em: toms@rhdo.com
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Passive Solar Opportunities

Typical Lot Grouping

PALOS COLORADOS

Moraga, Ca

Robert Hidey Architects

Richfield Investment Corporation

1/5/2009