



## Twinsprings Research LEED for Homes Design Charrette Monday, April 23<sup>rd</sup>, 2012 8 a.m. to 5 p.m.

Morning Agenda: 8 a.m. to 12 p.m.

Convene at Energy Logic Denver Office. 3606 W 50th Ave. Denver, CO 80212

Introduction: (Ellen) 15 minutes

A design charrette—a focused and collaborative brainstorming session held at the beginning of a project—encourages an exchange of ideas and information and allows truly integrated design solutions to take form.

### 1. Integrated Project Design

Platinum requires 94 points for 2413 sq. ft. 3 bedroom home

Introduction of the design team:

- James Plagman: architecture or residential design
- Shane Gring: LEED AP and green building or sustainable design
- Annette Garrigues: landscape architecture, habitat restoration or land use planning
- Ellen Dibble: Owner builder

Actively involved in at least 3 phases of construction/design

Phase 1. LEED Planning

Phase 2: Design Development/Energy Modeling

Phase 3: Final Design/Implementation/Construction

LEED AP: Shane Gring

Design Charrette: Integrate green strategies across all aspects of the building design, drawing on the expertise of all participants.

Building slideshow (Ellen) 15 minutes

Building orientation East West axis—window ratios—south facing 450 sq. ft.

NEED SOLAR SHADING DESIGN

Introduction to building plans (James) (20 minutes)

### 2. Durability Evaluation (Ellen) 10 minutes

2.1 Completed form and all requirements

NEED EXPANSIVE SOILS/EXTERIOR MOISTURE DESIGN (Engineer report)

### 3. Location and Linkages (Ellen) 10 minutes

Documentation of flood plain Flood map

Documentation for previously developed/boundaries Survey, soil report

Documentation of sewer/water service photos

Documentation of open space Survey, Satellite photos

### 4. Sustainable Sites (Annette) 30 minutes

Develop erosion protection plan

Remove invasive species

Landscape design

Reduce heat island effect

Nontoxic pest control. Caulk and seal, install screens, consider removing all planting within 24" (Is garage planting included?)



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BREAK 9:45-10:00

5. Water Efficiency (Ellen, Shane,, Annette) 15 minutes

Possible designs for water use as it flows off roof (no physical retention).

Possible graywater system.

Requirements of irrigation system design.

Meet indoor water use requirements (low flow faucets, toilets, etc.)

6. Energy Star Requirements (Shane) 45 minutes

1. Optimize Energy Use

2. Insulation Interior or exterior?

3. Air Infiltration (can we meet the thermal barrier requirements for a gut remodel?)

4. Effective windows—Energy Star rating. Design for solar gain in winter

5. Design of heating and cooling system New boiler for hot water and heat with solar preheated tank. Pipes in non-conditioned spaces insulated to requirement.

6. Very high efficiency boiler

7. Water heating pipe insulation and efficient heater—not structured plumbing?

8. Install all energy efficient lighting

9. Purchase all energy efficient appliances.

10. Materials and Resources (Ellen and James) (15 minutes)

Efficient framing

Environmentally preferable products

Waste management strategies

8. Indoor Air Quality (Shane?) (30 minutes)

1. Energy Star Guidelines

2. Adequate combustion venting Enclosed EPA certified woodburner

3. Moisture control? Dehumidification in laundry area? Included in air filtration system?

4. Plan for ventilation system to install filter and obtain good filtration numbers

5. Install exhaust fans to LEED requirements

6. Zoned non-ducted system with upgraded boiler.

7. Filters for air system?

8. Plan to limit indoor air contamination during construction—requirements?

9. Radon protection plan for slab—upgrade for crawlspace. (Ellen)

10. Garage separation and exhaust fan.

9. Awareness and Education (Ellen and group) (15 minutes)

User Manual—Walkthrough requirements

Website established

Open house?

Newspaper article?

LEED signage?



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LUNCH BREAK/DISCUSSION 12:00-1:00

Afternoon Agenda: 1:30 p.m. to 5 p.m.

Reconvene at 13673 W. 78<sup>th</sup> PL Arvada, CO 85284

Group tour (Ellen) 30 minutes

Identify major hurdles 30 minutes

Brainstorming session 30 minutes

BREAK 3:00-3:15

Observations from each team member 45 minutes

Review next steps: 50 minutes

Phase 2: Design Development/Energy Modeling

Phase 3: Final Design/Implementation/Construction

Closing: 10 minutes