• A Vision from King County and the City of Issaquah.............

• Visioning and Goal Setting Process
  • Site Planning Charrette
  • Eco-Charrette during Feasibility

• Multiple Stakeholders
  • YWCA
  • City of Issaquah
  • King County

• Setting the Stage
  • Keeping goals in site
  • Building Partnerships
  • Creating energy and enthusiasm for the project and goals, investing people in the process

BEYOND VANILLA GREEN
: pushing the affordable housing envelope

BLOCK 9 : TRANSIT ORIENTED DEVELOPMENT

CONCEPT 1

CONCEPT 2

FINAL CONCEPT

EVOLVED INTO....
Family Village at Issaquah
A YWCA Community

- 2.4 acre site, located in Issaquah Highlands
- 146 units of workforce housing for families, 0-3 bedrooms
- Childcare center for 150 children
- YWCA regional offices
- Issaquah Highlands Community Rooms
- An employment and job training center
- Resident community center building
- Community Outreach Services

Beyond Vanilla Green
: pushing the affordable housing envelope
• Holding on to the VISION!
  • Educate the Owner and project team
  • Everyone stays on message
  • Keep clear site of the goals
  • Clear and confident communication
  • Bringing the Contractor on early for preconstruction services
  • Perform early shoebox energy modeling which enables the project team to make educated decisions regarding energy and water use/conservation techniques
  • Budget Control
Outcomes - What did we want to do and how?
- Energy Conservation
- Water Conservation
- Longevity of Building materials
- Tell a story
- Education of residents and community
- Three tiered process to meet sustainability goals
  - increase envelope efficiency
  - reduce mechanical loads and adjust equipment sizing
  - augment with renewable energy
- Metrics
  - BuiltGreen 5 Star
  - LEED® NC Gold
  - Evergreen Sustainable Development Standard


Alternative 1 vs ECM1

The Alternative 1 building model was modified to include ECM1 – heat recovery with electric coil in place of the electric cove heater in the residential spaces. All other factors remained the same. The energy simulation performed shows that there are potential utility cost savings of 8% when ECM1 is applied.

Note that Alternative1 is the proposed case with the cooling set point in non cooled spaces modelled as 100F so as to determine the actual savings due to heat recovery. The Alternative 1 also does not include the savings due to low flow fixtures and improved elevator.

Following table demonstrates these energy savings broken out by utility. As shown in below, a potential utility cost savings of $8,500 per year (8%) is estimated for the added heat recovery.

<table>
<thead>
<tr>
<th></th>
<th>Kwh</th>
<th>Therms</th>
<th>Total $</th>
<th>Percentage Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative 1</td>
<td>910910</td>
<td>15683</td>
<td>105243</td>
<td></td>
</tr>
<tr>
<td>Alternative 2 (ECM1)</td>
<td>840122</td>
<td>15683</td>
<td>96654</td>
<td>8%</td>
</tr>
</tbody>
</table>

The following graphs show the relative energy usage by end-use for Alternative 1 and 2.
Paying for the VISION!

• Emphasizes the importance of having multiple stakeholder buy in and positive energy

• Federal, State, City and County Support
  CITY OF ISSAQUAH:
  • DONATED LAND
  • WAIVED PERMITTING FEES
  KING COUNTY:
  • GREENTOOLS
  • ENVIRONMENTAL & ENERGY CONSERVATION BLOCK GRANT
  • ONGOING TECHNICAL SUPPORT
  FEDERAL:
  • REICHERT BUDGET ALLOCATION
  • Local Utility Grants
    • PUGET SOUND ENERGY GRANT
  • Other Incentive Programs
    MASTER BUILDER’S ASSOCIATION:
    • BUILTGREEN PROGRAM

PROJECT FUNDING BY:
• CITY OF ISSAQUAH
• A REGIONAL COALITION OF HOUSING (ARCH),
• KING COUNTY HOUSING FINANCE PROGRAM,
• WASHINGTON STATE COMMUNITY TRADE AND ECONOMIC DEVELOPMENT

SOCIAL SUSTAINABILITY:
• TEACHING - TO ADULTS & KIDS
• EDUCATION PROGRAMS / OUTREACH
• MAKING IT CONVENIENT
• REACHING OUT TO THE BROADER COMMUNITY, INTEGRATION
• MAKING MEANINGFUL COMMUNITY CONNECTIONS

DURABILITY OF SYSTEMS & MATERIALS:
• 50/100 YEAR BUILDING MATERIALS
• RAINSCREEN TECHNOLOGY TO INCREASE BUILDING LONGEVITY, INDOOR AIR QUALITY & ENERGY CONSERVATION
• RECYCLED MATERIALS
• FACILITIES FOR COMPOST AND RECYCLING
• CONSTRUCTION WASTE RECYCLING

ENERGY CONSERVATION:
27% SAVINGS
POTENTIAL FOR ADDITIONAL 10% WITH DOMESTIC HOT WATER PRE-HEAT
• UPGRADE WALL AND CEILING ASSEMBLIES
• PROVIDE CONTINUOUS AIR BARRIER
• UPGRADE WINDOW ASSEMBLIES

ROOF ASSEMBLY: R-51
R-30 RIGID ABOVE SHEATHING
R-21 BATTS IN CAVITY
50 YEAR CLADDING MATERIAL

DECKS TO FOSTER COMMUNITY CONNECTIONS

OPERABLE AWNINGS TO ALLOW FOR CROSS VENTILATION

WALL ASSEMBLY: R-35
2X8 S
(2) LAYERS OF R-15 BATT INSULATION IN CAVITY
1.5" OF MINERAL WOOL INSULATION ON THE EXTERIOR
50 YEAR CLADDING

HIGH CEILINGS TO ALLOW FOR DAYLIGHT TO PENETRATE DEEP INTO LIVING UNITS AND OFFICES

CANOPIES FOR WEATHER PROTECTION & TO RELATE TO HUMAN SCALE
**Take Aways:**
- Replicable Systems
- Energy efficient wall and roof assemblies
- Energy efficient window assemblies
- Keys to making it work: persistence, a lot of planning, budget tracking, alternate systems
- Early energy modeling allows you to make informed decisions
- A committed team

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**WATER CONSERVATION:**
- **42% SAVINGS**
  - High efficiency toilets
  - Low flow shower heads and faucets
  - No potable water use for irrigation - 29,000 gallon cistern located in below grade garage

**LIGHTING:**
- All fluorescent and LED fixtures
- Auto dimming at classrooms and offices
- Photocells at all rooms
- Efficient exterior lighting - not over lit

**MECHANICAL SYSTEMS:**
- Highly efficient condensing boilers
- Campus hot water - maximize efficiencies
- Radiant cove heaters
- Heat pumps for AC and heat at commercial spaces

**RENEWABLE ENERGY:**
- PV ready
- 1 KW of solar panels at each building (4 total)
- Potential domestic hot water pre-heat, solar plate collectors

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**SMR Architects**

*BEYOND VANILLA GREEN: pushing the affordable housing envelope*
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SCHEDULE:
• Started construction late last year on foundation and grading.
• Bidding building construction on March 17.
• Certificate of Occupancy Anticipated Summer of 2011

DESIGN TEAM:
Owner: YWCA of Seattle, King, Snohomish
Architect: SMR Architects
Landscape: The Berger Partnership
Civil: Springline Design LLC
Structural: Swenson Say Faget
Mechanical: Sider + Byers
Electrical: Travis Fitzmaurice
Sustainability: Stantec Inc.
Contractor: Walsh Construction Co.