**UCSF Green Campus**
**Residential Resource Efficiency Project**

**Executive Summary**

**Goal:** To help UCSF Housing identify opportunities to more efficiently use and conserve water, energy and other resources.

**Project Timeline**

- **Data Collection**
  - Audits of 65 Campus Residence Units
  - 3rd/5th Avenue Houses: Focus on building-level upgrades
  - Multi-unit buildings at Mission Bay, Aldea, and Irving: Focus on tenant behavioral upgrades

- **Data Analysis and Recommendations**
  - Calculation of predicted savings on water use (gallons), electricity (kWh), and natural gas (therms) if current installations are replaced or upgraded to meet 2010 Energy Efficiency Standards
  - Cost-benefit analysis based on predicted cost of upgrade implementation and expected annual savings

- **Implementation**
  - Planned for June 2011 (target)

- **Post-implementation Analysis**
  - Completed as of September 2010

**Low Implementation Level Upgrades** (See reverse)

- Supply compost bins
- Insulate water pipes and water heaters
- Weather strip doors
- Low flow aerators on sinks and showers*

**Recommendations: Four Categories**

- **Low Implementation Level Upgrades**
  - Recommended for immediate implementation in all Avenue Houses

- **Medium/High Implementation Level Upgrades**
  - Savings and Costs have been quantified to help prioritize implementation

- **House-specific Upgrades**

- **Tenant Behavioral Upgrades**

*See Table 3 in Full Report, Section 2.2, for which sinks and showers still need this...**
Medium/High Implementation Level Upgrades†

**Refrigerator/Freezer Units**

**Total Predicted Savings**
- 10,808 kWh per year
- $1,282.89 per year

**Cost-Benefit Analysis**
- Estimated cost of upgrade: $800.00 per unit
- PG&E partnership will pay $100-200 of this as incentive
- Simple Payback Period <5 years for least efficient units

**Furnaces**

**Total Predicted Savings**
- 1,118 therms per year
- $1,218.20 per year

**Cost-Benefit Analysis**
- Estimated cost of upgrade: $1400.00 per unit
- PG&E partnership will likely reduce this as incentive
- Simple Payback Period <10 years for least efficient units

**Insulation/Airtightness**

**Total Predicted Savings**
- 24,837 therms per year
- $26,824.00 per year

**Cost-Benefit Analysis**
- Estimated cost of upgrades: $3,000 - $4,000 per house††
- Simple Payback Periods of 1-5 years at this cost
- Actual costs may be lower, professional appraisal is recommended

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†See Tables in Full Report, Section 2.2, for calculations. See sections 3.1-3.5 for explanation of methods

††Savings and Costs estimated using Lawrence Berkeley Labs Home Energy Saver online tool: http://hes.lbl.gov/consumer/

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House-Specific Upgrades

- Each Avenue House has particular needs not encompassed by global analysis
- Use section 2.3 in the Full Report to see a summary for each house

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Tenant Behavioral Upgrades

- Predicted Annual Savings if tenants replace incandescent bulbs with CFLs
  - 145 Irving: $236.07 ($13.10 per apartment)
  - Mission Bay: $6,685.03 ($15.50 per apartment)

- Predicted Annual Savings if tenants use power strip for electronics and switch strip off when not at home
  - 145 Irving: $188.80 ($10.50 per apartment)
  - Mission Bay: $3,405.19 ($7.90 per apartment)
  - Aldea: $955.49 ($2.05 per apartment)

- Currently strategizing education and outreach plans to implement these

To request a copy of the Full Report, e-mail the Team at greenUCSF@gmail.com