



## Discover building efficiency solutions

APWA Sustainability Conference  
Portland, Oregon  
June 28, 2011



## Projects & Incentives

### Projects we serve:

- Commercial new construction
- Renovations
- Tenant build-outs
- Building additions
- LEED®
- ENERGY STAR®



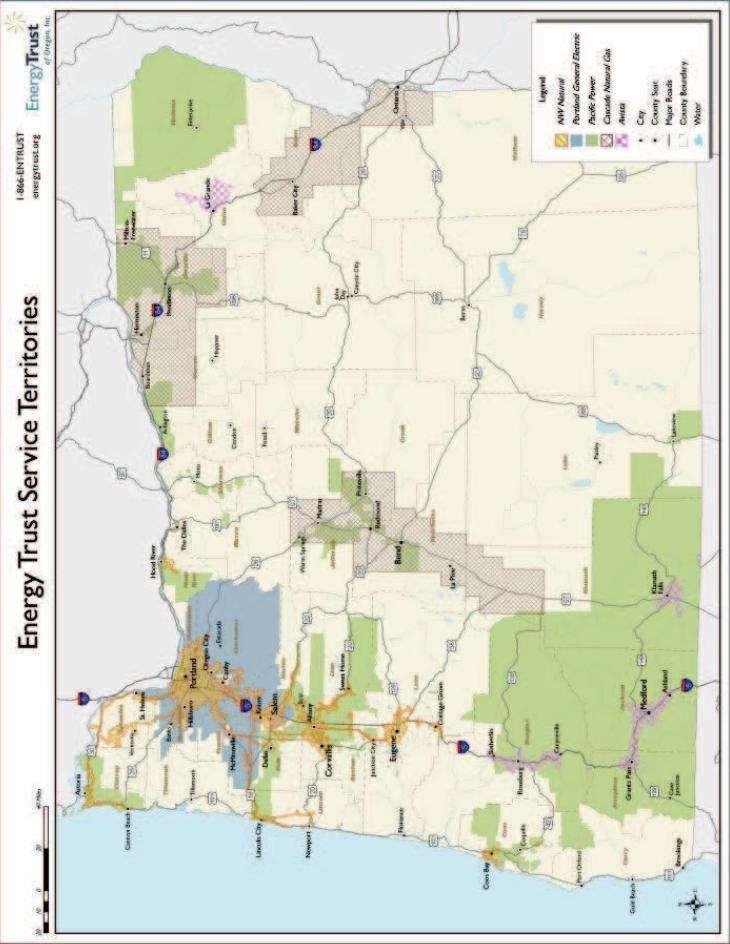
### What we offer:

Incentives for the design and construction of energy-efficient commercial buildings that exceed 2010 Oregon Energy Efficiency Specialty Code requirements.

[energytrust.org/business/](http://energytrust.org/business/)

## Eligibility

- The project must be served by Portland General Electric, Pacific Power, NW Natural or Cascade Natural Gas.
- The project must pay or plan to pay the public purposes charge.
- The project site must be located in Oregon.
- The project must be a commercial, industrial, manufacturing or institutional building.



## Commissioning



## 2010 Program: 3 Incentive types

\$40,000  
Max per project

Offsets costs of commissioning installed variable systems and equipment.

- All equipment to be commissioned must have been approved by and received an installation incentive from Energy Trust.
- Incentives are calculated per-kWh and per-therm, based on the annual energy savings approved by Energy Trust during installation.

### Professional Support

- Early Design Assistance
- Energy Modeling
- Commissioning

### Installation

- Standard Equipment
- Lighting & HVAC Calculators
- Special Measures

### Post-Occupancy

- ENERGY STAR



## Energy Modeling Assistance



\$25,000  
Max per project

Offsets costs of whole-building energy modeling.

- Project must be applying for modeling savings installation incentives
- Incentives are calculated per-kWh and per-therm, based on the estimated annual energy savings, as approved by Energy Trust
  - \$0.075/kWh and \$0.40/therm, up to \$25,000
  - Minimum incentive of 50% of approved modeling costs

## Early Design Assistance



\$2,500  
Max per project

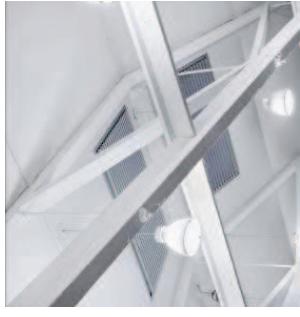
Offsets costs of an early design charrette or team meeting.

- Project must be in schematic design or earlier
- Owner must commit to achieving at least 5% energy savings beyond code
- Discussion must address specific energy-related topics
  - Owner, architect, mechanical engineer and energy analyst must be present
  - Must use a meeting facilitator and provide a report

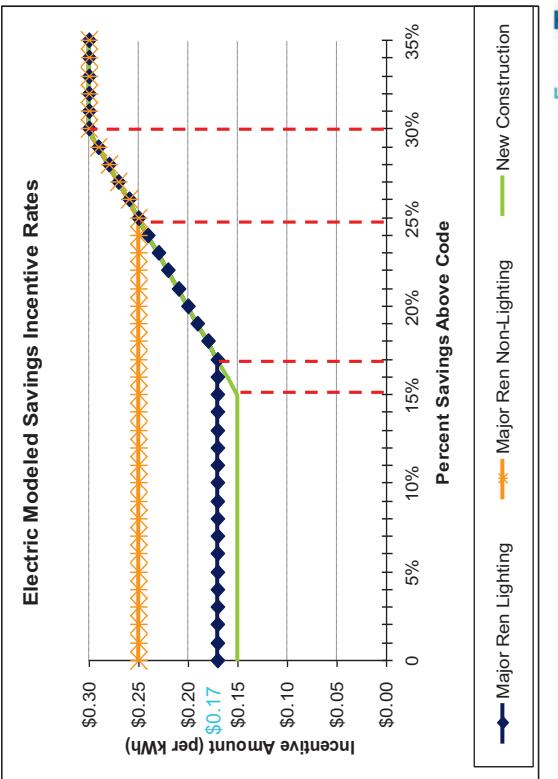


## Lighting & HVAC

### Modeled Savings



Microsoft Excel-based tools that calculate energy savings and incentives associated with installing specific lighting and HVAC equipment.



- Incentive levels will vary by building type and equipment.
- Lighting calculator: estimates savings and incentives based on reduction of the Lighting Power Density (LPD) of an interior space.
- HVAC calculator: identifies and estimates savings and incentives associated with HVAC measures that exceed 2010 Oregon Energy Code.

### Special Measures



Incentives for energy-efficient equipment or systems that exceed code requirements, but do not fit within the current incentive structure.

- Examples include specialized equipment that does not warrant an energy model or are not designated as standard equipment.
- Incentives are calculated per-kWh and per-therm based on the estimated annual energy savings, as approved by Energy Trust
- \$0.15/kWh and \$0.80/therm for new construction
- \$0.17/kWh (lighting) and \$0.25/kWh (non-lighting) and \$1.00/therm for major renovation
- Program will perform the calculation

### Standard Equipment



Incentives for installing equipment that meets specific energy-efficiency criteria.

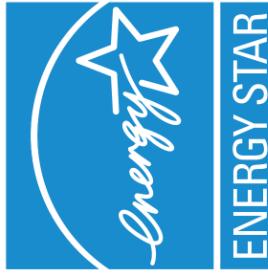
- Measures are available for: grocery and foodservice, multifamily and lodging, office, government, and schools
- 520S - Standard Equipment Workbook



• Program will perform the calculation



## ENERGY STAR

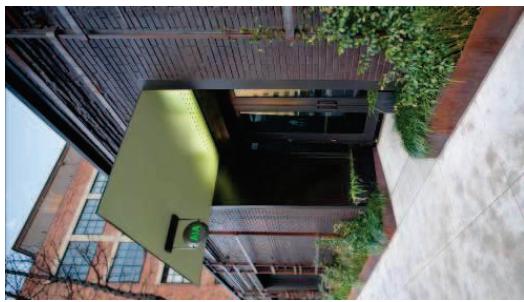


Incentives for buildings that earn the ENERGY STAR from the U.S. Environmental Protection Agency (EPA).

## ENERGY STAR

- Building must have been completed no more than two years prior to incentive application.
- Project must use EPA's Target Finder tool to identify the amount of energy savings the building will need to achieve certification.
- Project must use EPA's Portfolio Manager tool to determine actual energy performance rating (must be above 75).

## LEED



Incentives for projects that achieve any level of LEED certification and save energy beyond the 2010 Oregon Energy Efficiency Specialty Code.

- Incentives are calculated on a per-kWh and per-therm basis and are based on the total annual energy savings claimed in the project's submittal to the Green Building Certification Institute (GBCI), as approved by Energy Trust.
- Projects are eligible for additional incentives for Energy & Atmosphere credits 3 and 5 (Enhanced Commissioning and Measurement & Verification).



## Solar electric incentives



Incentives for PV systems are based on the rated power capacity of the solar array in watts and the utility in whose territory the system is located.

*Requires installation by an Energy Trust Solar Trade Ally.*

Commercial Projects (For Profit – 30 kW-200kW)	Systems under 30,000 watts	Systems over 30,000 watts	Max. Incentive (200,000 watts)
Pacific Power	\$1.00/watt	Varies from \$1.00 to \$0.50/watt	\$100,000
PGE	\$1.25/watt	Varies from \$1.25 to \$0.75/watt	\$150,000

- Requires a defined set of energy-efficient equipment and systems be installed.
- Installation must be verified.
- Projects must earn the ENERGY STAR from the Oregon Department of Energy.



## Low-rise multifamily ENERGY STAR Builder Option Package (BOP)



Incentives for multifamily projects three stories or less that install specific equipment types.



## How it works

- The project enrolled in the early schematic design phase or earlier.
- The owner committed to saving:
  - At least 60% energy savings beyond Oregon code through **energy efficiency and renewable energy**.
  - At least 50% energy savings beyond Oregon code through **energy efficiency alone**.

- The owner agreed to collaborate with Energy Trust throughout the project, including sharing post-occupancy energy data and participating in case studies.



## Energy Trust Solar Water Heating Incentives

Incentives for solar hot water are based on estimated annual energy production (savings).

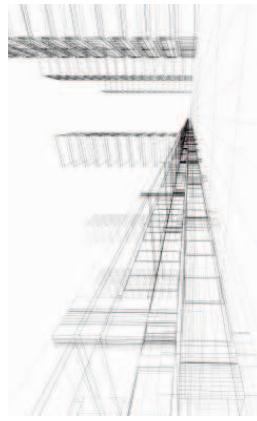


Commercial Projects	PGE/Pacific Power with Electric Water Heating	Northwest or Cascade Natural Gas with gas water heating	Maximum Incentive
Commercial Hot Water	\$0.40 per first year kilowatthour savings	\$6.00 per first year Therm savings	35% of project cost
Commercial Pool Heating	\$0.10 per first year kilowatthour savings (or for small pools \$3.00 per square foot of solar collector)	\$1.50 per first year Therm savings (or for small pools, \$2.25 per square foot of solar collector)	35% of project cost



### Overview

Launched May 1, 2009  
Provides enhanced incentives for owners who construct buildings with exceptional energy performance and strive for net-zero on-site energy use.



## Path to Net-Zero Pilot

- Pilot is currently full, with 14 projects enrolled, including:
- 4 schools or college facilities
  - 4 multi-unit residential buildings
  - 3 community centers/event spaces
  - 2 government/municipal buildings
  - 1 office building



## Case Study: eco FLATS

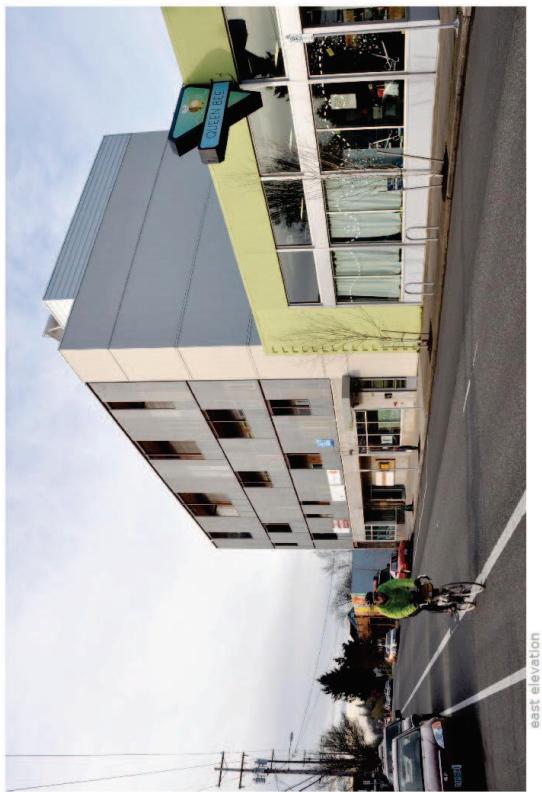




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- ① 3,000 sq ft roof area w/ 20 kW solar array and 100% Net Metering grant funds.
- ② Side Thermo panels provide up to 100% of winter heat energy heating.
- ③ LED lighting.
- ④ Energy monitoring at 11 locations across the building to encourage energy savings.
- ⑤ High efficiency boiler for radiant heating.
- ⑥ Electric radiant heating.
- ⑦ Exterior sun shade screens.
- ⑧ Tall operating windows provide ample day lighting and cross ventilation for cooling.
- ⑨ Ventilation system controlled sensing on exterior skin.
- ⑩ Unconditioned, exterior areas and common areas provide energy use.
- ⑪ Long term, secure bike parking for residents.
- ⑫ Low flow water fixtures reduce water consumption.
- ⑬ Energy efficient tradition effector (not shown).

**EnergyTrust**  
of Oregon



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of Oregon



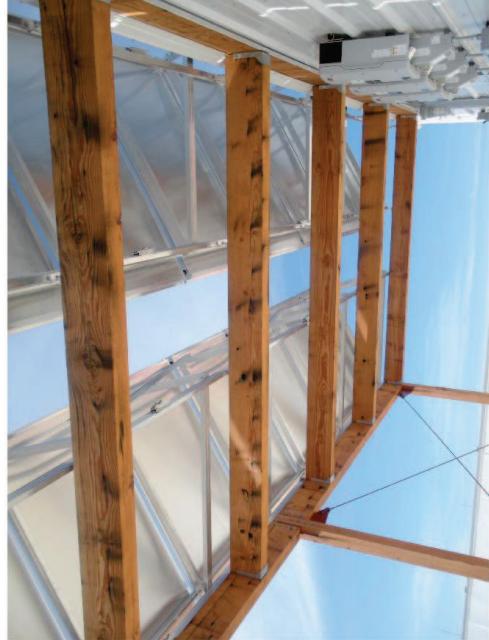
west elevation





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solar thermal

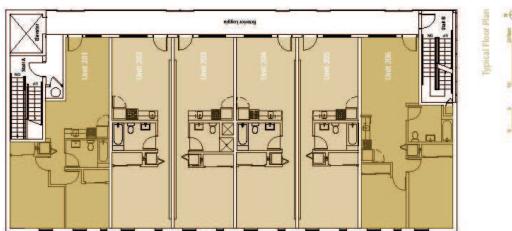


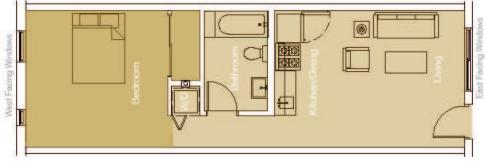
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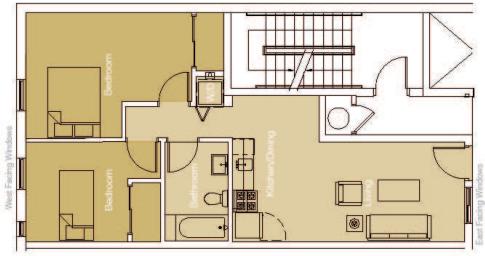




### Unit Type 2

Units 202, 203, 204, 205,  
302, 303, 304, 305  
Units 202, 302, 402 ADA accessible  
250sf

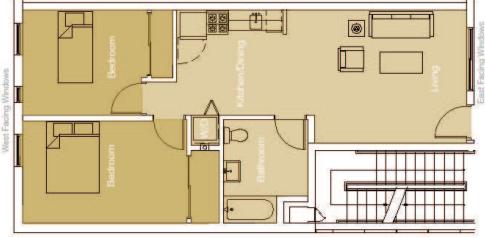
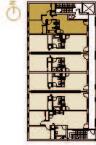
Amenities include:  
1 bedroom / 1 bathroom  
9 foot ceiling in the kitchen  
West and east facing windows  
Personal secure bike storage  
Access to blue workstation



### Unit Type 1

Units 201, 301, 401  
728sf

Amenities include:  
2 bedrooms / 1 bathroom  
9 foot ceiling in the kitchen  
West and east facing windows  
Personal secure bike storage  
Access to blue workstation



### Unit Type 4

Units 205, 306, 406  
Units are ADA accessible  
720sf

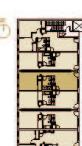
Amenities include:  
1 bedroom / 1 bathroom  
9 foot ceiling in the kitchen  
West and east facing windows  
Personal secure bike storage  
Access to blue workstation



### Unit Type 3

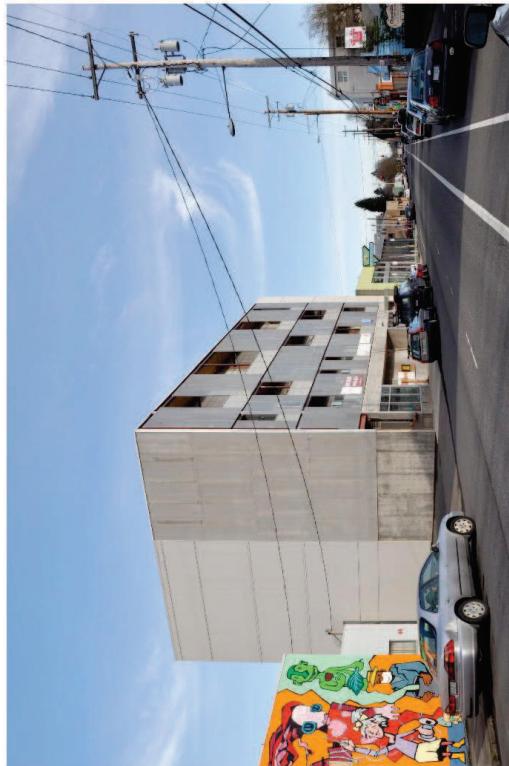
Units 203, 303, 403  
550sf

Amenities include:  
1 bedroom / 1 bathroom  
9 foot ceiling in the kitchen  
West and east facing windows  
Personal secure bike storage  
Access to blue workstation





view to west



**ecoFLATS** *a new way to live*

This project has the enthusiastic endorsement and dedication from Pacific Northwest College of Art, Portland State, The Bicycle Transportation Alliance, design professionals, consultants and subcontractors as well as the Oregon Energy Trust, Oregon Department of Energy, and the Portland Development Commission. ecoFLATS has invested considerable resources, and dedicated long hours into developing the concepts of this model that we believe is well suited for the Portland's goals for inner-city development.

Developer:	3695 N Williams, LLC Jean Pierre Veillet + Doug Shapiro, aia works partnership architecture <a href="http://www.worksarchitecture.net">www.worksarchitecture.net</a>
Architect of Record:	Siteworks <a href="http://www.siteworksportland.com">www.siteworksportland.com</a>
Builder:	Structural: DCI Consulting Engineers <a href="http://www.dci-engineers.com">www.dci-engineers.com</a>
Mechanical:	Hunter Davidson <a href="http://www.hunterdavidson.com">www.hunterdavidson.com</a>
Energy:	BEA Consulting <a href="http://www.beaconsulting.com">www.beaconsulting.com</a>
Financing:	Lewis & Clark Bank <a href="http://www.lewiscarrollbank.com">www.lewiscarrollbank.com</a>

Portland Development Commission  
[www.pdc.us](http://www.pdc.us)

This project is working with Energy Trust on a high-performance design in pursuit of a NetZero Standard. For more information on Energy Trust visit [www.energytrust.org](http://www.energytrust.org).



## Contact information

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