

City of Tacoma EnviroHouse



2013 Annual Report



EnviroHouse Mission:

The mission of the EnviroHouse is to educate and encourage residential builders, developers and residents to adopt resource and energy efficient products and practices in their homes and gardens. The steering committee shall monitor the value of the EnviroHouse towards meeting the missions of the partner agencies.

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I. Introduction, History, Governance

Introduction:

The City of Tacoma EnviroHouse, located at the Tacoma Recovery and Transfer Center, is a permanent model home where visitors can examine a variety of green materials, products, and natural landscape and garden ideas on display in a residential setting. The facility's displays address five primary areas of residential sustainability:

1. Sustainable Sites
2. Water Conservation
3. Energy Conservation
4. Material Conservation
5. Indoor Air Quality

Open to the public five days a week, including weekends, the EnviroHouse serves as a sustainable resource center for Tacoma and Pierce County residents and has attracted visitors from across the country. Free workshops and group tours are available for consumers to learn how to live sustainably, conserve energy and water resources, and be good environmental stewards.

Hours:

Wednesday - Friday

10 a.m. to 3 p.m.

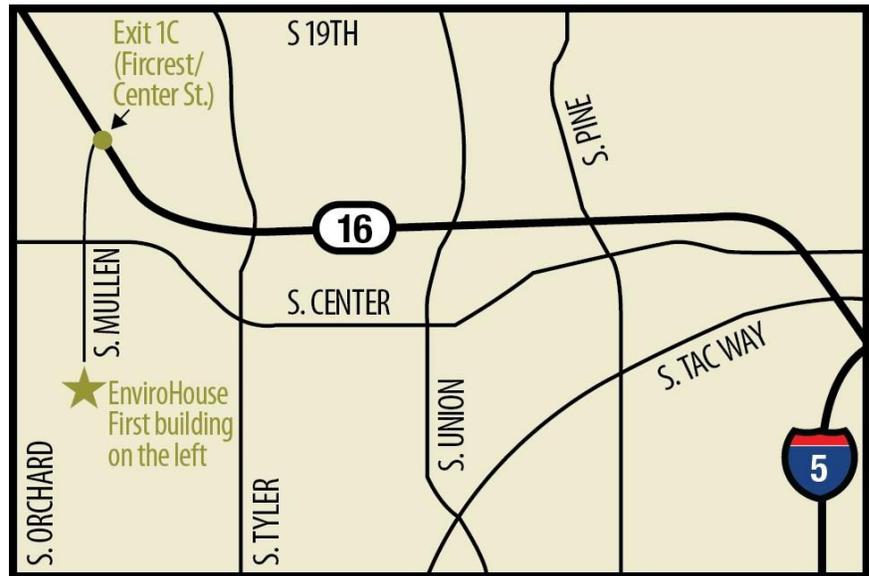
Weekends

11 a.m. to 5 p.m.

Directions:

From I-5: Take exit 132 and merge onto SR-16. Take exit 1C (Fircrest/Center Street). At the traffic light, go straight onto South Mullen Street, crossing Center St.; continue straight to enter the Tacoma Recovery & Transfer Center. EnviroHouse parking is in the first pullout on the left.

From Orchard Street: Turn onto South Center Street heading east. Turn right onto South Mullen Street; continue straight to enter the Tacoma Recovery & Transfer Center. EnviroHouse parking is in the first pullout on the left.



Our Foundation:

The EnviroHouse started life in the late 1990s as the "Green House," a demonstration facility for green living, operated by the Pierce County Solid Waste Division. It was displayed at the Puyallup Fair (now the Washington Fair) for many years. The building was acquired by the City of Tacoma Solid Waste Division in 2004, moved to the Tacoma City Landfill in 2005, and repurposed to be a permanent demonstration facility open year-round for use by the general public. Under the direction of the EnviroHouse Steering Committee, this community resource has provided sustainability information to Tacoma and Pierce County residents since 2006.

The Building Blocks:

The EnviroHouse is funded and managed by the City of Tacoma's five enterprise utilities:

1. Solid Waste Management
2. Surface Water Management
3. Wastewater Management
4. Tacoma Power
5. Tacoma Water

The Builders:

Steering Committee

- Bill Smith, Environmental Services, Sustainable Resources Section
- Bruce Carter, Tacoma Power
- Daniel Thompson, Environmental Services, Business Operations
- Mark Guthrie, Tacoma Water
- Shauna Hansen, Surface Water
- Megan Marquett, Media and Communications
- Craig Hamburg, Street Operations
- Janda Volkmer, EnviroHouse Coordinator



The partnership is based on a Memorandum of Understanding signed in the spring of 2005. Associate partners, (non-funding and non-voting) include the Master Builders Association, Street Operations Division and the Media and Communications Office.

The EnviroHouse Steering Committee is the legislative policy and decision-making entity responsible for adopting budgets, strategic direction and governance of the EnviroHouse. The Steering Committee meets quarterly and is comprised of a voting representative from each of the five utilities and non-voting representatives from the Media and Communications Office in General Government, Public Works Street Operations Division, and the EnviroHouse Coordinator.

“Tacoma’s EnviroHouse is a great place to learn: from the courses that are offered, the materials used inside the house, and the exhibits and plants (with identification!) outside the house. It raises awareness and helps us see possibilities – with real workable solutions in place. It answers questions and inspires ideas. The EnviroHouse (and Janda) is a good resource for information when contemplating large or small projects. It is also nice to be able to gather information and get ideas without a salesperson’s pressure to buy.

I always wonder how many times people drive by on their way to recycling/yard waste/ landfill before finally stopping at the EnviroHouse!”

- Michel Bellamy

Landscape Sub-Committee

The EnviroHouse Landscape Sub-Committee meets quarterly and consists of Steering Committee members from Tacoma Water, Surface Water, Urban Forestry, Wastewater (TAGRO), Street Operations and the EnviroHouse Coordinator. The Committee’s role, in conjunction with assigned Grounds Maintenance staff, is to establish sustainable maintenance policies and practices, plan and recommend landscape improvements and demonstration areas, and develop resource materials for EnviroHouse visitors.

II. Facility/Landscape Description:



Air Quality

All interior and exterior paint is low or no VOC (volatile organic compounds that off-gas). Adhesives in products meet sustainability standards as do cleaning products utilized at the EnviroHouse.

Regionally Sourced

Three of the four paint brands used onsite are manufactured locally or regionally.

EnviroHouse Structure & Redesign

The EnviroHouse is a Timberline modular home originally built in 1990. After the house was acquired from Pierce County and placed on its foundation, MD Architects was contracted to reconfigure the house from a fair exhibit to a traditional single family home. York Construction remodeled the interior with new and improved structural components, integrating reused materials, rapidly renewable resources, products containing a high percentage of recycled content and paints and adhesives with low or no volatile organic compounds (VOC's). Products were acquired from local or regional resources as much as possible with two principles in mind: products should be available locally and should not cost substantially more to buy and maintain than more traditionally used materials.

EnviroHouse Interior

The EnviroHouse is well-insulated, featuring double-pane, low-E Argon-fill windows, a ductless heat pump system, Energy Star appliances, high-efficiency electric water heater, efficient CFL (compact fluorescent) and LED (light emitting diode) lighting and Solatube (tubular skylight) natural daylighting. Interior water use is moderated by reduced flow aerators on faucets, a new one-gallon dual flush Water Sense toilet and a low-water use dishwasher. A working display (portable for offsite use) features water-wise showerheads.

Interior furnishings are composed of recycled, renewable and reused components. The floors are bamboo and cork (renewable resources), ceramic tiles containing recycled glass, carpet tiles made from recycled/recyclable fibers and linoleum made from linseed oil (flax), pine resin and pine wood flour. Counter tops are made from recycled glass, paper, and Portland cement with fly ash. Furnishings, as well as window and wall coverings, are made from natural materials with non-toxic dyes.

EnviroHouse Exterior

The EnviroHouse sits on a low-impact post and pier foundation which has significantly less impact on the surrounding land by reducing the need for heavy excavation equipment to install. The foundation for the 820 square-foot home was installed utilizing shovels, sledge hammers and a jackhammer. About two cubic feet of dirt was excavated on-site. The roof shingles are made of recycled rubber tires with a 50-year warranty.

Exterior walls are weather-board lap fiber-cement siding made of wood fiber, sand, and cement (resistant to fire, insects, rot and UV rays). Deck and ramp materials are made from recycled plastics and wood and durable wood products (tiger wood). The facility is powered in part by a 1.9 kWh solar power system (ten panels) intertied to the Tacoma Power grid that generates about one-third of the power used.

EnviroHouse Landscape

The EnviroHouse landscape demonstrates the principles of natural landscaping by using primarily native and adaptive plants. It is divided into several zones based on water use and microclimates, including a rain garden, raised vegetable gardens, low and moderate water use planting areas, a shady area, and a small display showing examples of "step-able" plants that can be used in place of turf grass.

The landscape irrigation is designed to use water efficiently and includes a weather-based irrigation controller that irrigates plants only when necessary. In 2011-12, a residential rain garden was added to the site. Rain barrels collect water from the roof and store it for use in the landscape. Signs are located throughout the landscape educating visitors on specific principles of natural landscaping.

III. Landscape Enhancements and Accomplishments:

New Exhibit with Sustainable Walls and a Green Roof

The kiosk exhibit displays six sustainable wall materials and a variety of permeable concrete-brick pavers and aggregate blocks on the walkway. The interior floor is a plastic grid/gravel porous system.

The structure features a green roof which absorbs and filters rainwater into a rain barrel, releasing it into the dry stream bed leading to the rain garden. A green roof cut-away display demonstrates the construction layers and appropriate plantings.

EnviroHouse Kiosk



Landscape Maintenance Plan: The Landscape Sub-Committee reviewed the Landscape Maintenance Plan to clarify and update specified natural landscape maintenance criteria and irrigation methods. A reference binder was created for plans, plant lists, references and guidelines.

Irrigation Evaluation: An irrigation evaluation was performed to assess needs relative to ongoing changes in the landscape. Recommended irrigation modifications were approved to be implemented in 2014.

Irrigation Controller: A new weather-based controller was acquired in late 2013 to update the previous system. It will be installed in 2014 and tested to determine its effectiveness when irrigation resumes in the summer.

Landscape Interpretive Signs: The sub-committee worked with a contract graphic designer to update the information and images on seven large interpretive landscape signs. The new signs will be manufactured and installed in early 2014.



IV. Workshop and Visitor Survey Results

EnviroHouse Visitors and Outreach:

Visitors: 2679 visitors

568 individuals in 41 tours

644 attendees in 41 workshops

About

59% new visitors

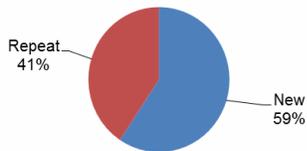
41% prior visitors

The EnviroHouse continues to expand opportunities for visitors to learn how to live sustainably, manage resources, reduce consumption and be good environmental stewards. The coordinator has developed relationships with local reporters and has generated articles on EnviroHouse features, landscaping and workshop programs in The News Tribune Home and Garden sections on a regular basis.

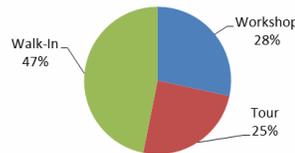
Workshops cover a wide variety of topics to encourage sustainability with topic-specific handouts to educate visitors and provide links to online resources and contacts. Relationships with educators are being strengthened to encourage tours and use of resources and to contribute to the education program under development.

Walk-in visitors spend an average of 20-30 minutes onsite; those interested in building, remodeling or other sustainable practices may stay over an hour.

2013 New Visitors vs. Repeat Visitors

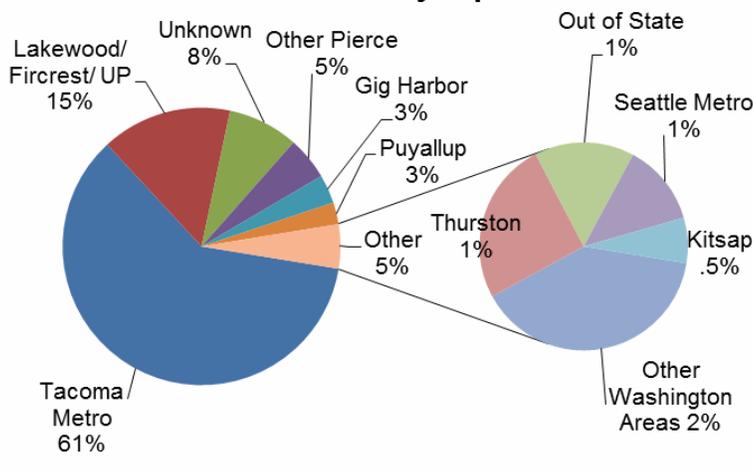


2013 Walk-In, Tour, and Workshop Attendees



Tacoma residents account for 61% of visitors with 15-20% from TPU service areas outside the City limits.

2013 Attendance By Zip Code



Tacoma Metropolitan Area	833
Lakewood/ Fircrest/ UP	209
Unknown	113
Other Pierce County	69
Gig Harbor	46
Puyallup	35
Other WA State	28
Thurston County	18
Out of State	11
Seattle Metropolitan Area	9
Kitsap County	5

Referrals:

Referrals to the EnviroHouse come from the utilities, word-of-mouth and from people who drive by. The majority of visitors are interested in general information, yet there are specific displays or programs many visitors come to see.

In 2013, **Tacoma Power referred more than 130 customers to the EnviroHouse** to see demonstrations of the ductless heat pump in conjunction with their current incentive program. **The EnviroHouse serves as a satellite showroom to demonstrate working examples of efficiency technologies for Tacoma Power’s residential energy conservation programs.**

Visitors referred by Surface Water came to the EnviroHouse to see the rain garden, pervious pavers, rain barrels and green roof.

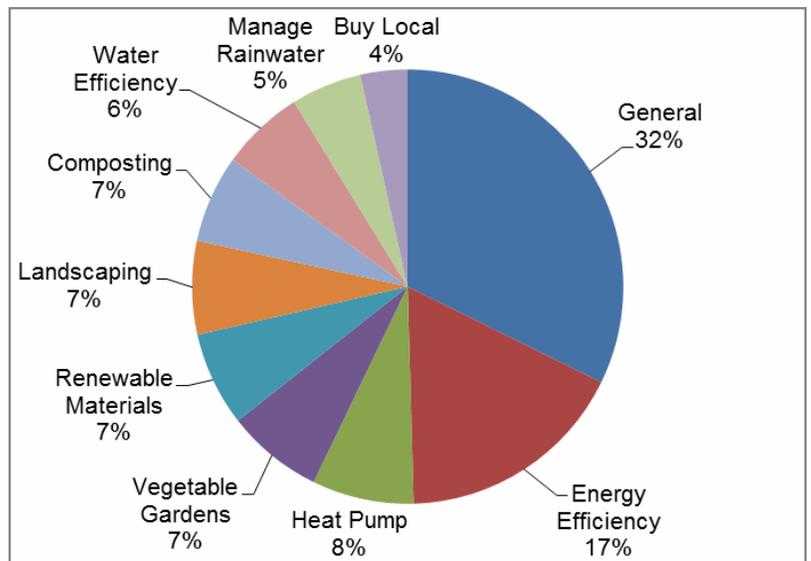
Partner Promotions

2013 distributions to visitors included:

- 1,367 compact fluorescent lamps
- 435 five-minute shower timers
- 300+ rain garden posters
- 200+ garden calendars
- 150+ tree calendars
- 351 visitors were added to the Tacoma EnviroNews listserv as a result of their visit
- Hundreds of partner brochures, flyers, stickers and handouts

Visitors to the EnviroHouse are asked to indicate why they decided to visit. The table and chart below show the breakdown by number of responses and percentage of the total responses.

General Interest	584
Energy Efficiency	313
Heat Pump	138
Gardens	131
Renewable Materials	127
Landscaping	126
Composting	118
Water Efficiency	113
Manage Rainwater	96
Buy Local	64



I first visited the EnviroHouse right after I purchased my home in Tacoma last spring. Since then I've installed a ductless heat pump, three Convectair zonal heaters, five rain barrels, dozens of efficient light bulbs, and an assortment of efficient shower heads and sink aerators. Estimating conservatively, I've already saved at least \$575 in water/sewer/electric costs. If saving a boat load of money and living more comfortably doesn't inspire you, than Janda certainly will. From researching contractors to explaining how each facet of the EnviroHouse works, Janda went above and beyond.

As a consumer I've always felt like utility companies consistently pay lip service to their customers about the environment, but the EnviroHouse and Janda are living proof that Tacoma and TPU are different. The EnviroHouse it's a great resource for improving the environment, saving ratepayer money, and helping consumers live more comfortable and healthy lives.

- Kess Smith

Quarterly Surveys

Quarterly surveys were initiated by email to measure behavior changes as a result of visits to the EnviroHouse. Invitations were sent to 316 email addresses from walk-in visitors with a 19 percent response rate. (*Workshop visitors will be surveyed in 2014.*)

Of the 59 respondents:

75 percent had incorporated a green element as a result of their visit to the EnviroHouse.

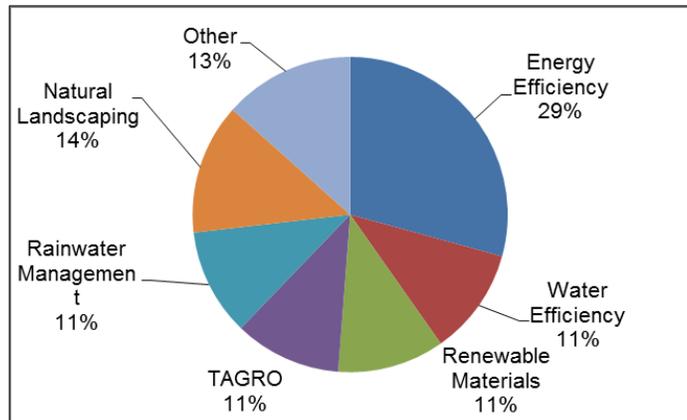
65 percent of respondents rated the EnviroHouse as excellent

96 percent rated it as an excellent or good educational resource for green building and natural landscaping.

Sustainable Elements Incorporated:

Visitors were asked to identify the sustainable building elements they had incorporated into their home as a result of their visit to the EnviroHouse. Their answers are in the chart below.

Energy Efficiency	24
Water Efficiency	9
Renewable Materials	9
TAGRO	9
Rainwater Management	9
Natural Landscaping	11
Other	11



"I am writing to say how impressed I am with the EnviroHouse, Janda and the sustainability and recycling programs Tacoma has to offer. Upon arrival in Tacoma after living in Alaska for over 40 years, I was delighted to learn about the EnviroHouse and the excellent and free workshops that have motivated me to start composting, build raised beds and plan a rain barrel system. Janda has been very helpful and I find the topics covered and presenters to be very informative. The free light bulbs are a wonderful bonus! I also appreciate how Janda shares other resources for edible gardening and sustainability in Pierce County.

Thank you for supporting such a wonderful program and staff to help citizens be more conscious of sustainability and energy efficiency. I am confident that Tacoma is leading the nation in these efforts and is a wonderful example for other cities in the world."

- Katy Parrish

V. Plans and Goals for 2014

2014 EnviroHouse Goals

- **Public Resource Center:** Continue to reorganize the entrance room (lobby) to be a functional resource center where visitors can access more self-help materials via handouts, videos, online resources and sample displays of sustainable products.
 - **Survey 2014 Workshop Attendees:** Work with staff experts to design a survey for workshop attendees.
 - **Resource Notebooks:** Continue to update and expand the Resource Notebooks with relevant information and contact information on materials and products used in the EnviroHouse and landscape. Digitize information and place online for greater accessibility.
 - **Expand Workshop Topics:** Seek new subjects and instructors to continue community interest and increase consumer awareness about sustainability issues and options.
 - **Sustainability Videos:** Educational videos are being planned by the Office of Sustainability and Environmental Policy, Environmental Service team members, EnviroChallengers, and TV Tacoma. When available, they will be used in EnviroHouse programs and tours.
 - **Media Marketing Plan:** Work with Media and Communications to implement the new marketing plan. The plan is to update EnviroHouse print materials and the website with new information, images, and resources to increase web presence and enhance accessibility and function. Media and Communications staff will also create video shorts on the EnviroHouse to show on TV-Tacoma.
 - **Education Outreach:** Develop an effective tour registration process with appropriate forms and guidelines for tour groups to register online and for internal staff to efficiently manage tours. Establish an education sub-committee to refine and complete the draft tour guide started in 2012 to supplement visitor experiences and to serve as a teaching tool for educators and tour group leaders.
 - **Quarterly Art Shows:** Locate and install an affordable art hanging system and reinstate quarterly art shows.
-

2014 Landscape Goals

- **Kiosk:** Install three natural-material wall sections on the open north end of the kiosk; add weather protection to existing internal walls; add signage and recognition in 2014; and add lighting when feasible.
- **Exterior Landscape Interpretive Signs:** Install the seven revised interpretative signs
- **Adjust Hydrozones:** The hydrozones include mixed plant types which cause the irrigation schedule to use water inefficiently. Evaluate the hydrozones in 2014 and determine steps to make them water-efficient.
- **Update Landscape Plant List:** List updates will be ongoing as landscape revisions take place.
- **Irrigation Display Board:** Update and redesign the irrigation display board (currently inside) to weatherize the display and relocate it on the grounds to be more accessible to the public.
- **Turf Demonstration:** Research will be performed to determine the potential of adding a turf demonstration area. The intent is to determine the quality of three different turf types provided with three different crop coefficients.
- **Landscape Maintenance Plan Review:** Review the landscape maintenance plan in late 2014 and update as needed.

Summary: Over the last eight years, the City of Tacoma EnviroHouse has evolved from a grand idea to a practical, functional community resource serving a broad variety of individuals and community needs. As the benefits of sustainable living become better understood and sought after, the EnviroHouse has stepped up to meet the growing need for learning opportunities and resources.

Visitors have increased three-fold; EnviroHouse workshops have provided a successful model that several other organizations in the area have emulated and relationships with educators, the media, non-profit environmental groups and green builders have multiplied. It is gratifying to see the sense of pride when repeat visitors bring friends and family members - from down the street, other cities and states and even countries - to show off what their home-town has to offer. A common refrain is, "I'm so proud to be from Tacoma where we do this cool stuff and take our environment seriously."

With an ever-expanding collection of resource materials, demonstration projects, tours, educational workshops and programs, the EnviroHouse Steering Committee and staff are striving to address the challenges of keeping pace with the rapidly evolving development of sustainable products and technologies to meet the expressed interests of residents, businesses, contractors and educators in the Tacoma metropolitan area, Pierce County and beyond.

We are looking forward to a busy, productive future as we implement established goals, develop new exhibits, expand our resources and continue to build new relationships.

Prepared by: EnviroHouse Steering Committee

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