

Platinum SITES: LEED for Homes v4 Affordable Housing Case Studies

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What is LEED for Homes and Why does it matter?

- A voluntary rating system administered by the U.S. Green Building Council (USGBC).
- Requires the home to include several prerequisite design features and additional features selected by the builder to achieve performance efficiencies and overall environmental impact reductions.
- Before a project is officially certified, it goes through a thorough verification process by a trained, third-party, LEED for Homes Green Rater.
- According to the Department of Energy, all homes in the U.S. account for 21% of the total energy consumed and 20% of carbon dioxide emissions.
- LEED Platinum homes typically achieve at least a 30% reduction in both energy and water use.
- A large emphasis is placed on the improvement of indoor air quality, with requirements to prevent ventilation and mold issues, and to utilize low-VOC building materials.

But how do specific site infrastructures affect LEED Certification?

Case Study #1: Pua Loke

- This project is a 54-unit development in Lihue, Kauai, Hawai'i, available to households earning 30% – 100% of the Area Median Income (AMI).
- A few units are set aside for families at risk of homelessness, experiencing homelessness, or formerly homeless with placement through the Kauai Community Alliance.
- A mix of 15 studios, 24 two-bedroom units, and 15 three-bedroom units.
- Designed as a compact development (36 dwelling units per acre of buildable land).
- Situates homes close to a diverse list of over a dozen nearby amenities to increase community connectivity and interaction.
- Most notably, this project maintains a passive ventilation system design that allows for local island breezes and promotes healthy air movement through the home.



Case Study #1: Pua Loke



Case Study #2: Waimea Huakai

- This project is a 34-unit development in Waimea, Kauai, Hawai'i, available to households earning 30%, 50%, and 60% of the Area Median Income (AMI). The project also includes a community room.
- Financed using a combination of Internal Revenue Service Low Income Housing Tax Credits (LIHTC), the HOME Investment Partnership Program (HOME), and the County of Kauai Project Based Voucher program

RENT STRUCTURE

Rent structure for Waimea Huaka`i is as follows:

Area Median Income %	Unit Size	Square Footage	*Rent	# of Units
30 / 50 / 60	1	677	** / ** / \$951	1 / 1 / 6
30 / 50 / 60	2	909	** / ** / \$1,124	2 / 2 / 16
30 / 50 / 60	3	1134	** / ** / \$1,281	1 / 1 / 4

*Rents are subject to change based on utility allowance adjustment and maximum allowable rents as established by HUD

**Rent share is based on 30% of household adjusted monthly income



Case Study #2: Waimea Huakai





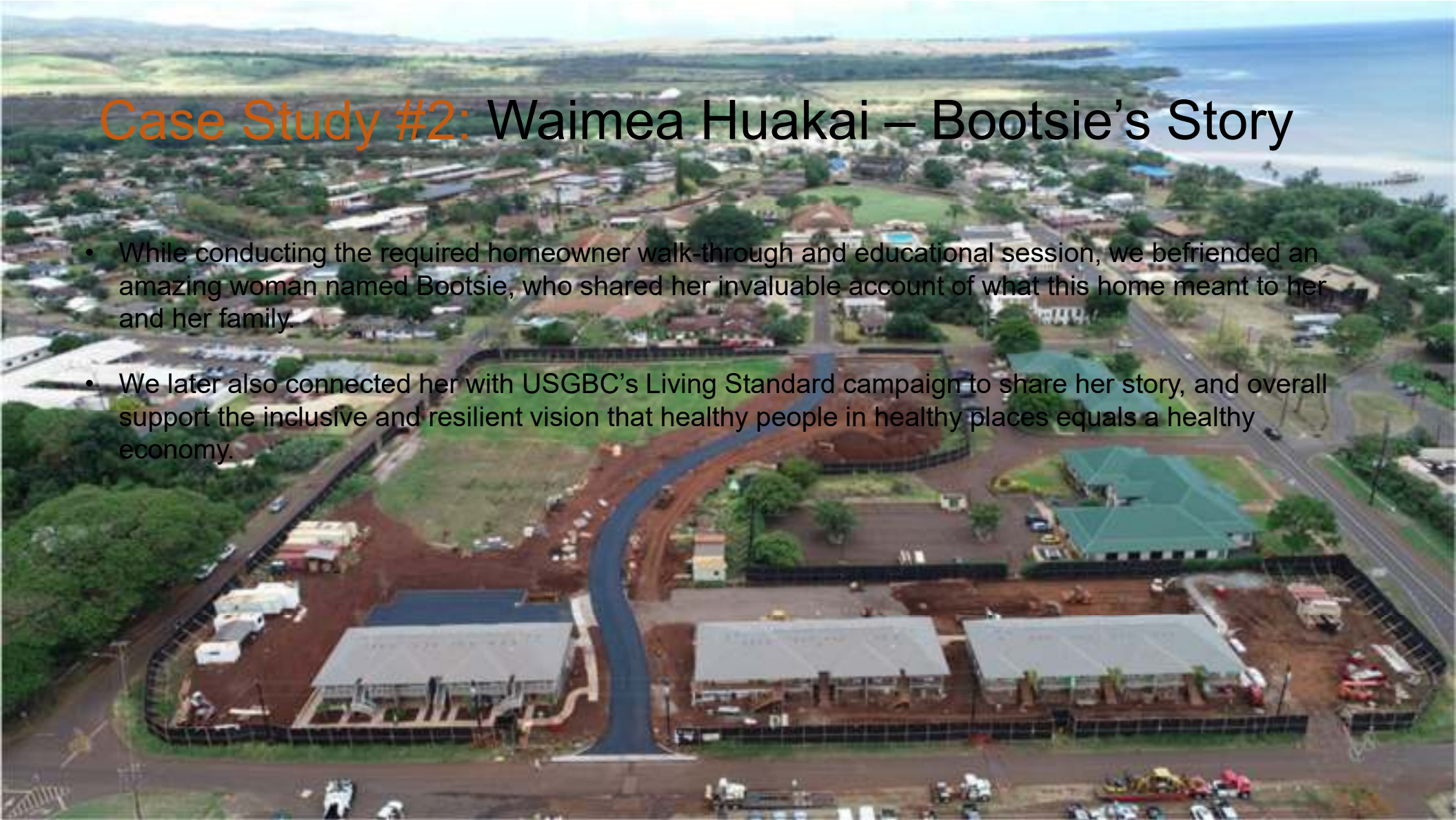
- This project also reduces its total water use by over 40%, through high efficiency fixtures and water efficient landscaping practices suitable for the local climate.
 - Achieved a 70% reduction from the baseline landscape water requirements
 - Total water savings are estimated to be over 104,000 gallons per month
- The LEED prerequisite Construction Activity Pollution Prevention creates an extra layer of documentation and verification of basic best management construction practices. No project can be Certified without these:
 - Stockpiled and protected disturbed topsoil from erosion
 - Controlled the path and velocity of runoff with silt fencing or comparable measures
 - Protected on-site storm sewer inlets, streams, and lakes with straw bales, silt fencing, silt sacks, rock filters, or comparable measures.
 - Prevented air pollution from dust and particulate matter





Case Study #2: Waimea Huakai – Bootsie's Story

- While conducting the required homeowner walk-through and educational session, we befriended an amazing woman named Bootsie, who shared her invaluable account of what this home meant to her and her family.
- We later also connected her with USGBC's Living Standard campaign to share her story, and overall support the inclusive and resilient vision that healthy people in healthy places equals a healthy economy.



The background image shows a modern building with large windows and a balcony, partially obscured by lush greenery and trees with yellowing leaves. In the foreground, there is a trellis structure with orange fabric draped over it, and a stone retaining wall. The overall scene is a well-maintained, sustainable outdoor space.

THE Sustainable SITES Initiative

Synergies between LEED and SITES Certification

- SITES provides a comprehensive framework for designing, developing and managing sustainable and resilient landscapes and other outdoor spaces
- A certification system similar to LEED; however, it is more geared towards the performance measures of the project site, targeting the following components:
 - Reducing water demand,
 - Filtering and reducing stormwater runoff,
 - Enhancing biodiversity,
 - Providing pollinator and wildlife habitat,
 - Reducing energy consumption,
 - Improving air quality,
 - Improving human health,
 - Increasing outdoor recreation opportunities

1



Slide 13

- 1 JS: Can you add talking points to this slide?
Sarah Buente, 1/10/2017

Green infrastructure
restores & replicates
ecological systems to
create human benefits.





Communities protecting
open space reported
savings of **\$200,000** per
year in property damage
caused by floods.





Capital cost savings
ranged from **15 to 80%**
with green infrastructure



One study found that adoption of widespread green infrastructure practices could save **1.2 million** megawatt-hours of electricity per year in California. These energy savings represent enough electricity to power more than **102,000** single-family homes for one full year.



Rain gardens cost **42%**
less over their life cycle &
reduce environmental
impact by **62-98%**.



TRADITIONAL LANDSCAPE

City of Santa Monica



- ▶ 67,000 gallons of water
- ▶ 670 pounds of yard waste
- ▶ 80 maintenance hours

SUSTAINABLE LANDSCAPE

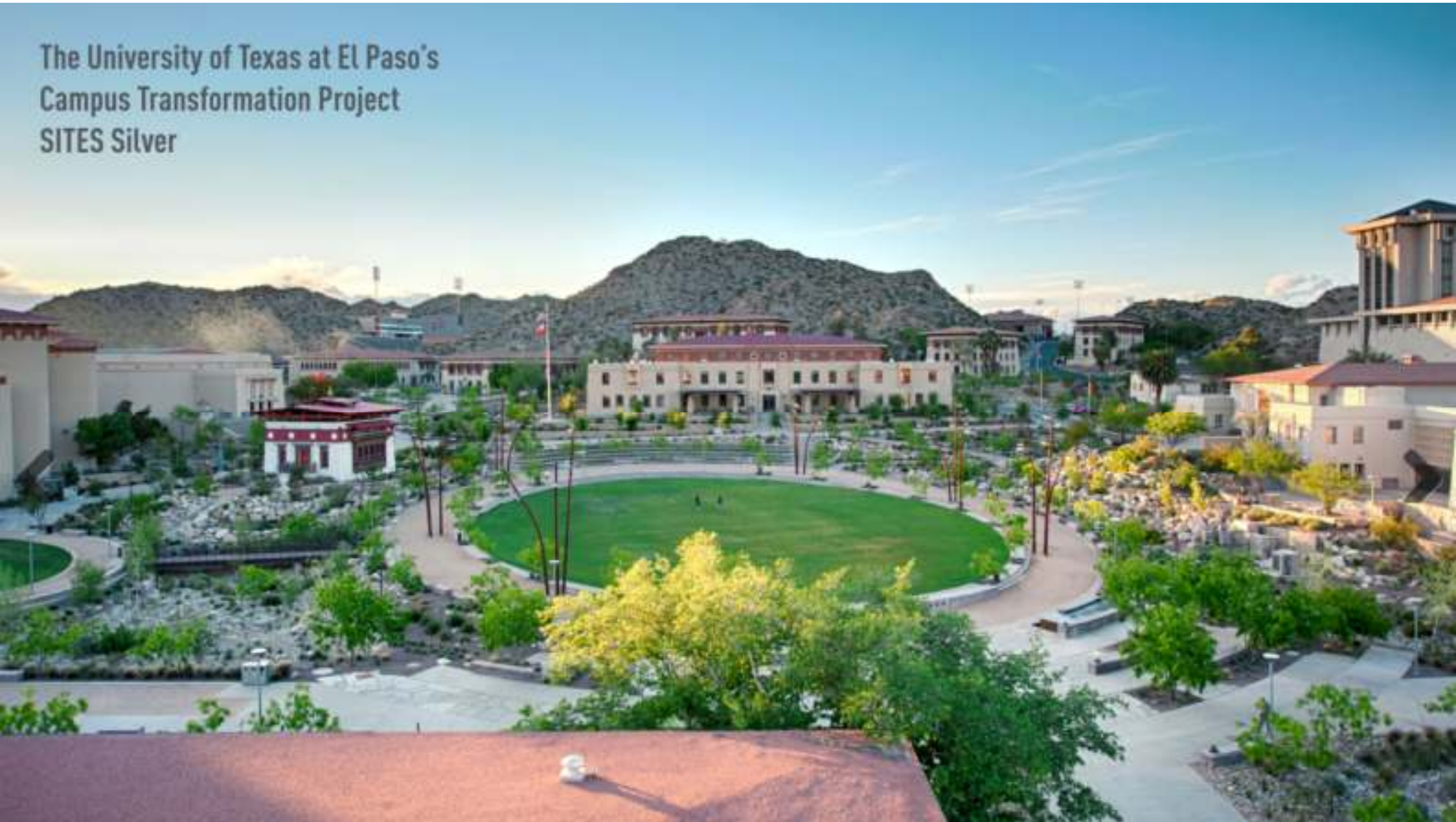
City of Santa Monica



\$2,200 per year in cost savings

- ▶ 6,000 gallons of water
- ▶ 250 pounds of yard waste
- ▶ 15 maintenance hours

The University of Texas at El Paso's
Campus Transformation Project
SITES Silver



Designing for Resiliency






Chicago Navy Pier
SITES Gold

“SITES was an important tool that kept our entire team **accountable to a high standard** of best practice and resulted in an unprecedented project—the transformation of Chicago’s Navy Pier into an authentic and green destination reflective of the city’s identity.”

James Corner, founder and design director
of James Corner Field Operations

SITES allows you to prioritize human health and environmental restoration, and tell that **sustainability story** to your stakeholders.





Ultimately, it's about creating healthy and resilient land development projects and using nature-based solutions.

verde

LANDSCAPE ARCHITECTS
ARCHITECTS