ABOUT WEBER THOMPSON

Founded in 1987, Weber Thompson is a full-service architecture, interior design, landscape, and planning firm.

We believe that good design includes green building practices – integrating disciplines that create buildings, interiors and places that are not only good for the environment and community, they are essential to the health and well being of users, are easier to market, more efficient to operate and help “green” the bottom line.

Since our inception, green practices have been at the core of what we do. When we moved into our LEED Platinum Certified offices over eight years ago, we solidified our commitment to sustainability.

- USGBC Natural Talent Design Competition, 1st place (2008)
- AIA Seattle Honor Awards, Commendation for Terry Thomas (2008)
- AIA COTE Top Ten Green Projects, Terry Thomas (2009)
- Architecture At Zero, Honor Award for Conspicuous Consumption (2015)
Architecture at Zero is a zero net energy design competition open to students and professionals worldwide, engaging architecture, engineering, planning students and professionals in the pursuit of energy efficient design.

- The 2015 competition: mixed-use student housing site on the UCSF Mission Bay campus
- Weber Thompson partnered with energy consultants at WSP Group to empirically demonstrate that the design would meet ZNE
- In our concept, the budget for net-zero energy is tracked and displayed in real time – students and their families actively manage their energy with continual feedback

LOT SIZE: 113,000 SF
BUILDING SIZE: 418,320 SF
LOCATION: SAN FRANCISCO, CA
PROJECT TYPE: RESIDENTIAL: MULTIFAMILY
THE DESIGN TEAM RESEARCHED STUDENT DEMOGRAPHICS AND INTERVIEWED STUDENTS, PROVIDING INSIGHT INTO OCCUPANCY/USE PATTERNS. FROM THERE, FUTURE RESIDENTS WERE DIVIDED INTO 3 PROFILES; WHICH WERE CHARTED COMPARED TO DEFAULT RESIDENTIAL SETTINGS IN THE ENERGY MODEL. RESULTING IN A WEIGHTED AVERAGE THAT REFINED ASSUMPTIONS OF OCCUPANCY AND LIGHTING PATTERNS IN THE RESIDENTIAL UNITS.
ENERGY USAGE APP (WEATHER-NORMALIZED NET ZERO “BUDGET”):

1. INDIVIDUAL
2. “NEIGHBORHOOD”
3. SITE
4. RENEWABLE ENERGY PRODUCTION
5. APP CONFIGURATION FOR “PUSH” ENERGY ALERTS
The overall energy performance of each building in relation to each other is ranked from highest to lowest performance highlighted with a gradient LED light banding at the exterior study spaces. A public dashboard at the ground level elaborates on the site energy use and performance.
Highest performing floors are lit by LED's to encourage community energy conservation.

Covered open-air courtyards provide a haptic connection to the environment, bolster community + passive cooling/ventilation of residences.

Translucent panels selectively replace PV panels for daylighting.

A ground source heat pump integrated into structural piles provides central hot water.
RESIDENTIAL SYSTEMS

WINTER
1. TIGHT | WELL-INSULATED ENVELOPE
2. PASSIVE SOLAR HEAT.
3. CLEAR GLASS MAXIMIZES SOLAR HEAT.
4. HYDRONIC RADIATOR HEATS PERIMETER.
5. HRV VENTILATION – W/ HEAT RECOVERY.
6. HRV BATHROOM EXHAUST

SUMMER
1. OPERABLES – COOLING.
2. CONTROL SOLAR HEAT.
3. HRV VENTILATION (CO2) – NO HEAT RECOVERY.
4. HRV BATHROOM EXHAUST – HEAT RECOVERED

EXHAUST
EXHAUST – HEAT RECOVERED
OUTDOOR AIR
TEMPERED FRESH AIR
HOT WATER
END USE BREAKDOWN

ENERGY CONSERVATION STRATEGIES

- Modern EUI
- Energy Efficient Building
- Improved Building Envelope
- Low-Flow Fixtures
- HRVs
- Heat Pumps
- Lighting Controls
- Occupant Behavior
- Domestic Hot Water
- Heating
- Pumps
- Fans
- Cooling
- Lighting
- Equipment

EUI (kBtu/sf/yr)

Modern EUI (kBtu/sf/yr)

Energy Efficient Building

Improved Building Envelope

Low-Flow Fixtures

HRVs

Heat Pumps

Lighting Controls

Occupant Behavior

Domestic Hot Water

Heating

Pumps

Fans

Cooling

Lighting

Equipment

12.1

Domestic Hot Water

Heating

Pumps

Fans

Cooling

Lighting

Equipment
Thanks to preservation incentives, the Sunset Electric Company’s legacy and home lives on. Red brick terracotta emblems with the Sunset Electric Company logo have been restored to their original glory and continue to decorate the building’s facades nearly a century later.
The courtyard is a key component of the building’s dramatic energy savings because it eliminates common area energy use. The secondary benefit is that interior circulation is pleasantly daylit and provides natural daylighting and ventilation to residential units. See chart at right for other major reductions.

**COURTYARD**

The courtyard is a key component of the building’s dramatic energy savings because it eliminates common area energy use. The secondary benefit is that interior circulation is pleasantly daylit and provides natural daylighting and ventilation to residential units. See chart at right for other major reductions.

<table>
<thead>
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<th>Energy Type</th>
<th>Seattle Mid-Rise Baseline</th>
<th>Sunset Electric Actual</th>
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- **39 EUI - SEATTLE BASELINE** (12 EUI UNIT PLUG & LIGHTING LOADS)
- **22.7 EUI - S.E. ACTUAL** (10.5 EUI UNIT PLUG & LIGHTING LOADS)
THANK YOU.