

An aerial photograph of San Francisco at dusk. The Transamerica Pyramid is the central focus, its spire reaching towards a sky with soft orange and blue hues. The city's dense urban landscape is visible below, with lights beginning to glow from the buildings. In the background, the Golden Gate Bridge and the bay are visible.

Mynt Systems

Chartwell School Energy & Construction Feasibility Study

Study Prepared for:
Chartwell School
2511 Numa Watson Road
Seaside, CA

Performance is Everything

Building Performance eliminates inefficiencies and leverages utility cost savings to increase **profitability** while improving health, wellness and enjoyment for people and planet.



What we do

1

Development, design, engineering, and execution of turnkey energy projects. This includes energy modeling and economic value analysis.

2

Integration of human-centric smart building technology for the improvement of health, wellness and enjoyment.

3

Tenant Improvements and Market Readies with single point of contact, as a General Contractor.

4

Ongoing operations and maintenance of performance systems and post project measurement and verification of performance.

Time is money

Efficiency is infused throughout our entire process.

We don't like to waste your time, nor ours.

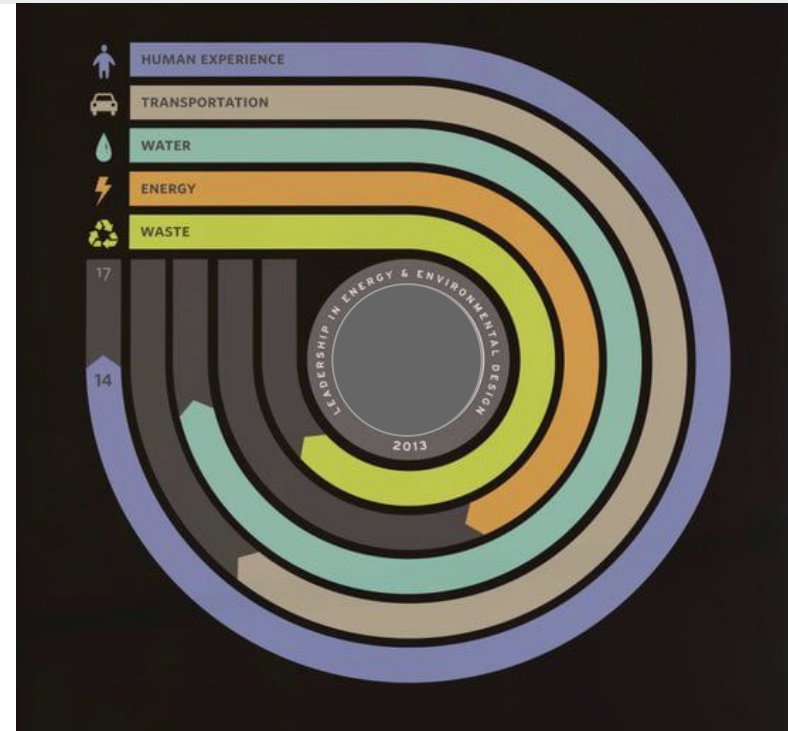
We don't like to waste, period.



Visibility

Bragging Rights

A [Mynted](#) building gives the ability to proudly display your commitment of sustainability to the public, staff, students, alumni and the greater educational community.



The Mynt System

0
1



Assessment

Assessments include a consultation to determine the client's goals and results in a deliverable we call the Feasibility Study.

Design

Each project is engineered with the client's and property's unique aspects in mind. We are 'technology agnostic' selecting for best performance.

0
2



0
3



Administration

We work directly with utility companies to secure the largest rebates available as well as estimating tax incentives.

The Mynt System Continued



Implementation

As a general contractor we will manage the entire project under a single contract.

Verification

We perform quarterly utility analysis to evaluate project performance after completion.



Maintenance

We offer maintenance services and operations support for maximum performance results.

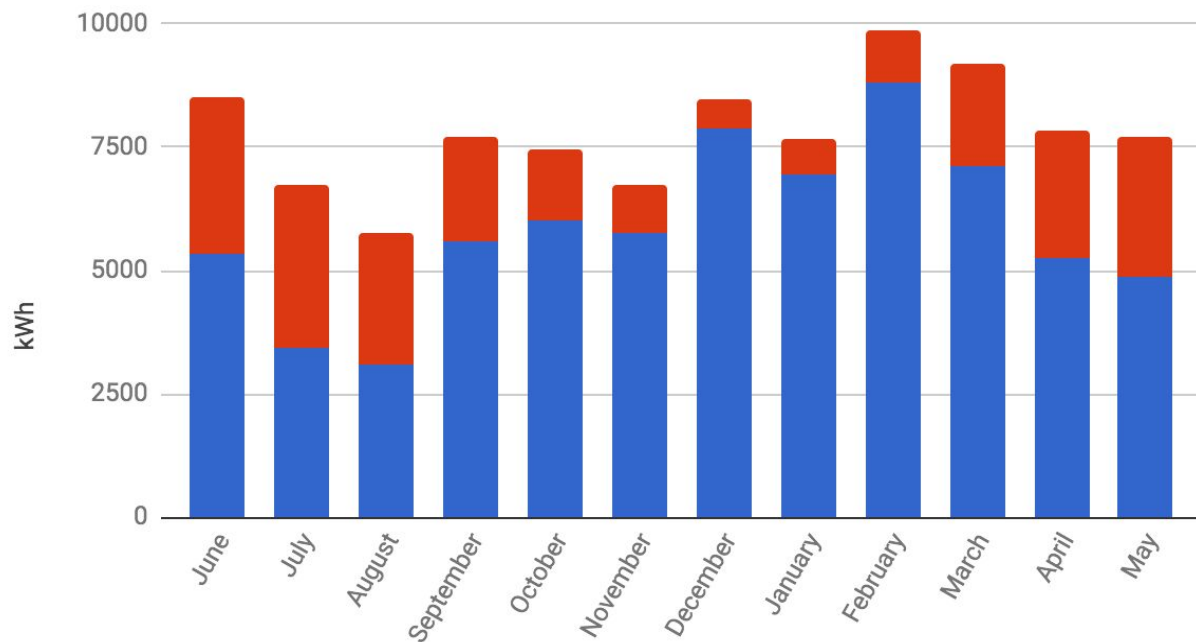
“if it don't make dollars
it don't make sense”

-DJ Quik



Utility Offset Analysis

Sizing for Net Zero Electric



2018-19

Total charges: \$14,760

Total kWh: 70,137

Average cost/kWh: \$.21

2018-19 + PV generation*

Total charges: \$19,715

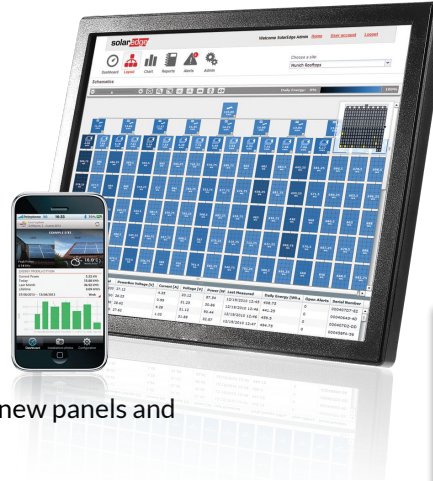
Total kWh: 93,679

Average cost/kWh: \$.21

*PV generation based on lifetime production readings taken from inverters - Total charges/usage are estimated as if no PV generation

Solar PV - Option 1

Proposed:
54 kW Rooftop Solar PV Replacing Existing System



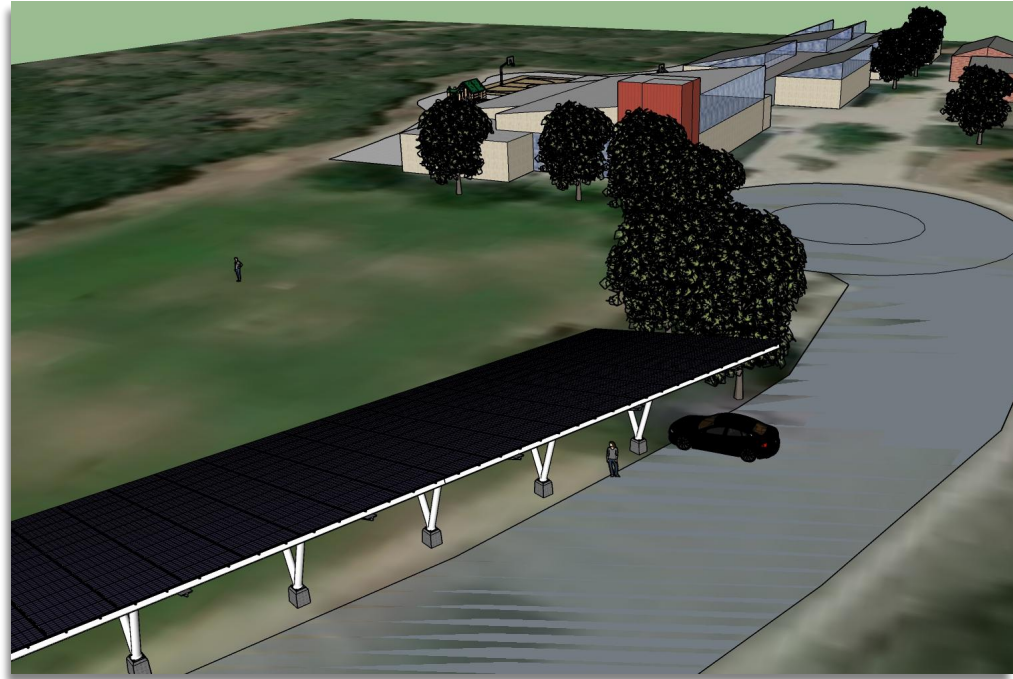
- | Remove inefficient existing solar array and replace with new panels and inverters. Reuse existing AC wiring
- | (150) Hi-efficiency tier-one solar modules (360 watt)
- | System sized to offset 100% of facility consumption post-efficiency work
- | New system will come equipped with internet based monitoring capabilities, ensuring maximum production
- | Project Cost: \$140k - \$160k
- | Projected Savings: \$14k

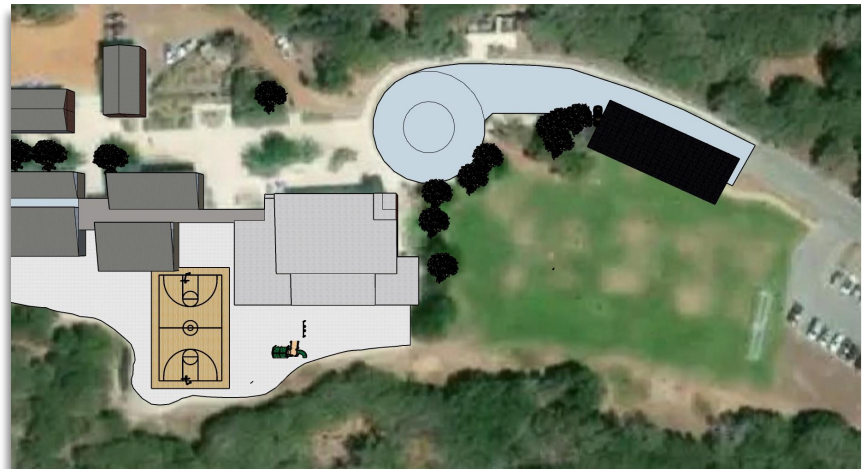
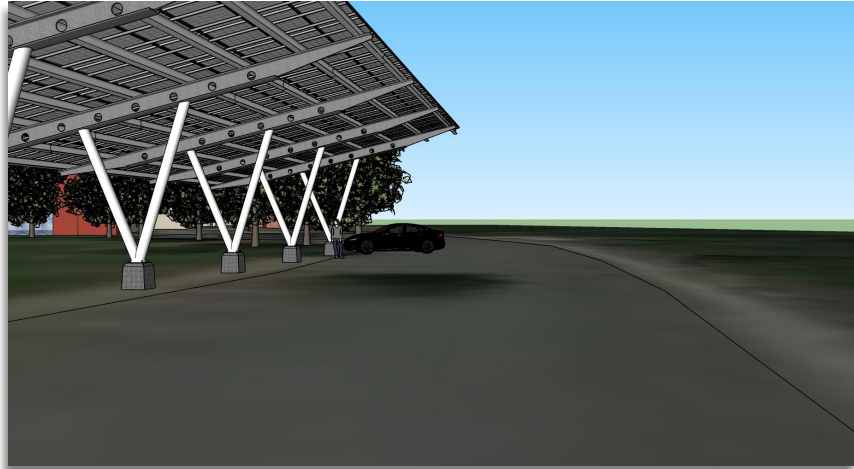
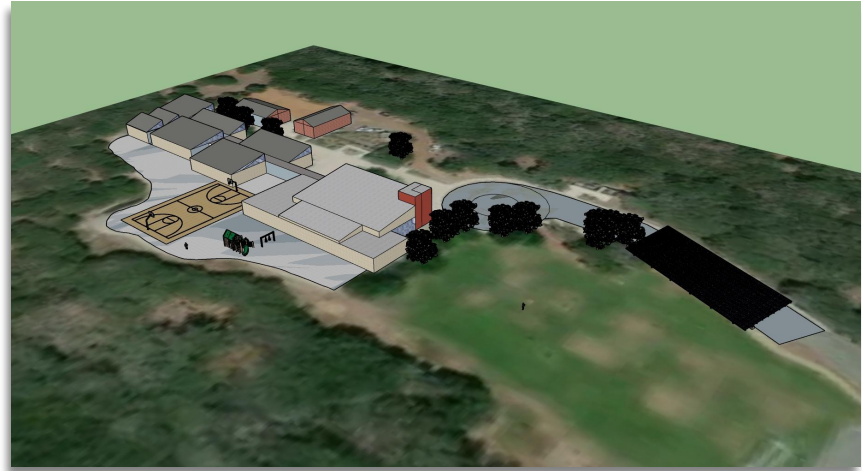
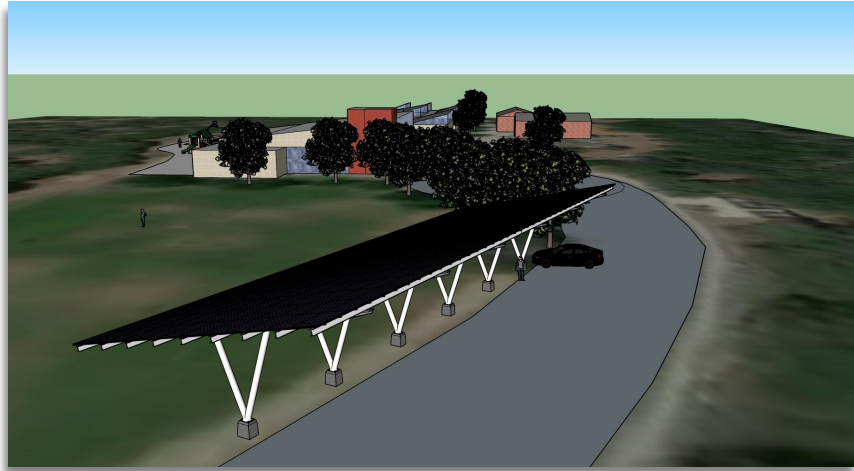


Solar PV - Option 2

Proposed:
86.4 kW Shaded Carport Solar PV

- | Carport structure proudly displays Chartwell's commitment to sustainability
- | (240) Hi-efficiency tier-one solar modules (360 watt)
- | System sized to offset 100% of projected future facility consumption including new construction & EV charging stations
- | Project Cost: \$300k - \$325k
Projected Savings: \$22k





LED Lighting

Proposed:

Retrofit all (609) existing T8 fluorescent, HID, CFL, and incandescent light fixtures with high-quality, high-performance LED technology

- | 60% Energy Reduction = \$6k annual savings
- | 50,000+ hr rated life means reduced maintenance
- | Studies have shown LED can boost focus, increase comfort, health & productivity
- | Project Cost: \$50k - \$55k Lighting
 \$20k Controls
 \$10k Emergency Backup
- Projected Savings: \$6k - \$7k

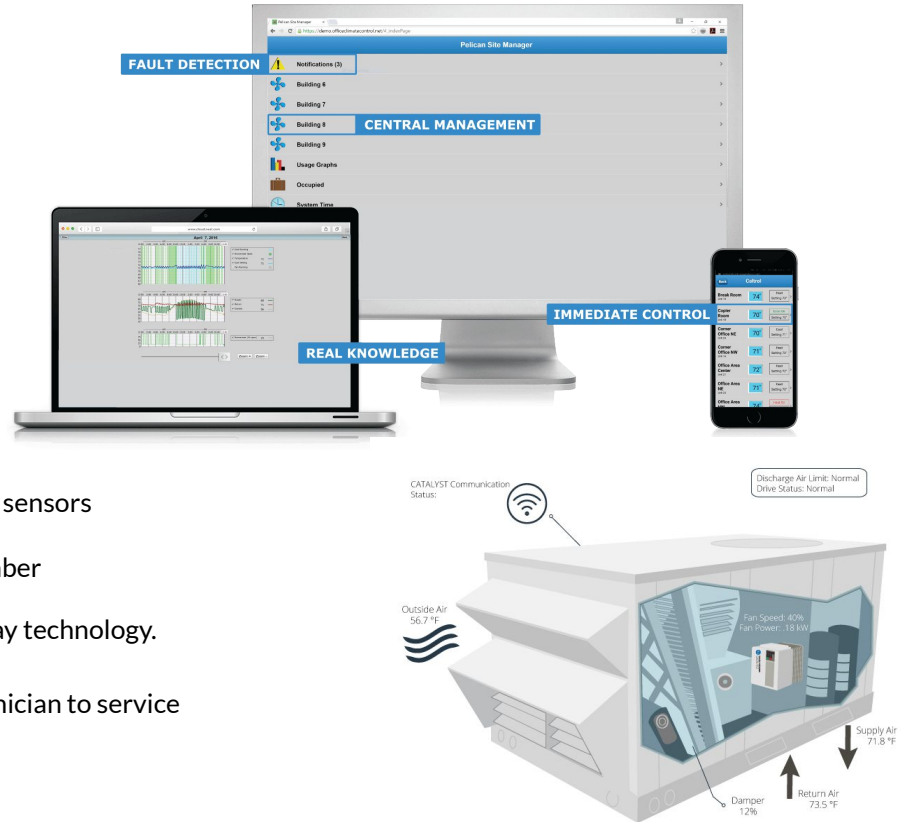


HVAC Controls Retrofit

Proposed:

Replace existing proprietary HVAC control system with open-source, intuitive, internet-based wireless control system

- | New control system gives Chartwell system-wide visibility, alerts and control from any phone or computer
- | Replace existing thermostats, CO2 sensors, slab sensors, communication hub, relay modules, zone controllers and alarm sensors
- | Chartwell can grant custom access privileges to each staff member
- | No complex setup. EASY for anyone to use. Simple plug and play technology.
- | Manufacturer agnostic system allows any qualified HVAC technician to service
- | Project Cost: \$73 - 78k
- | Projected Savings: \$1k



Additional Services

| **Battery Storage** - \$100k - \$125k for zero carbon resiliency

| **EV Charging** - 2-port Level-2 Chargers \$15k/ea

| **New Ultra High Efficiency Toilets** - \$125/unit rebate available

| Mynt will seek out all **incentives, grants** and **advantageous financing opportunities**



'Straw Bale' Renovation

Proposed:

Mynt acts as Construction Manager and General Contractor in the demolition and reconstruction of Chartwell's straw bale building

- | Brace-off structure, mold and material decay abatement and removal
- | Build new code compliant insulated walls, new waterproofing, electrical and interior wall finish
- | Plaster or conventional siding
- | Estimated Cost: \$75/sf @ 300 sf= \$22,500

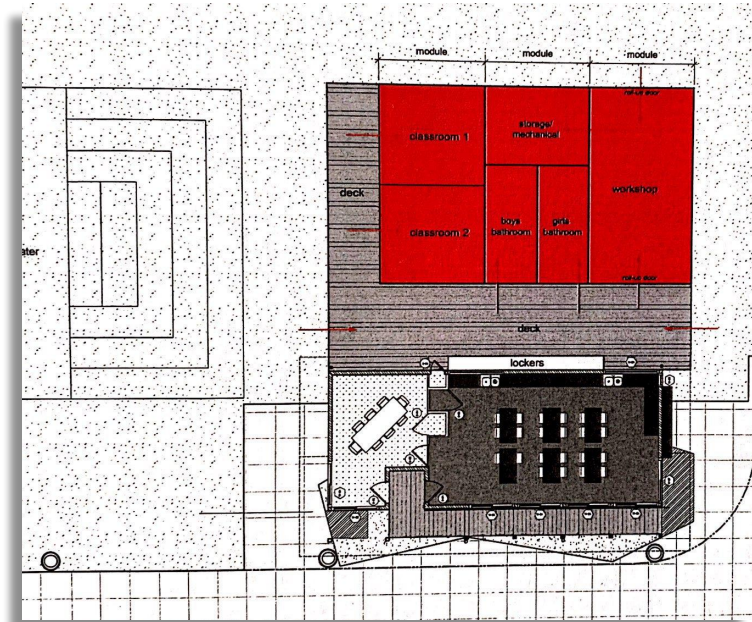


New High School Construction

Proposed:

Mynt acts as Construction Manager and General Contractor in the development and construction of the high school expansion building at Chartwell

- | Construction of new high school wing based on current design drawings
- | Modular or site-built convention construction
- | Slab on grade or pier and beam foundation
- | High performance, thermally efficient wall and ceiling design.
- | Standing seam roof
- | Final design and spec TBD
- | Estimated cost: \$300/sf @ 2400 sf = \$720,000



How Can Mynt Systems Help Chartwell in Their Journey to LEED (Re)Certification?

- 1. PLAN** – Work with Chartwell and LEED consultant to map out a clear and attainable path
- 2. MEASURE** – Install advanced energy meters to track consumption and reduction
- 3. REDUCE** – Implement agreed upon energy efficiency measures to reduce consumption
- 4. PRODUCE** – Implement onsite energy generation (solar PV)
- 5. VERIFY** – Provide quarterly M&V reports tracking and verifying savings

Project Financing

Creating positive cash flow

- | No upfront capital required
- | Loan payments replace utility costs
- | Long terms generate early cash flow = **maximum NPV**
- | 100% Project funding available.



Chartwell gets
sustainability
recognition, branding
and marketability +
carbon offset credits

Potential to capture
tax benefits
turbocharges
property performance



PG&E On-Bill Financing

0% Interest Loan for Energy Efficiency

- | Financing up to \$1,000,000 of project costs with \$0 down
- | Loan terms up to 10 years
- | Zero Interest
- | No minimum credit requirements
- | Loan repayment is based on projected energy savings



Project Performance

Energy Efficiency Project

Optimized Scenario - Solar PV (option 1), LED Lighting, OBF Financing, Prepaid Solar Service Agreement

2511 Numa Watson Rd. Seaside, CA

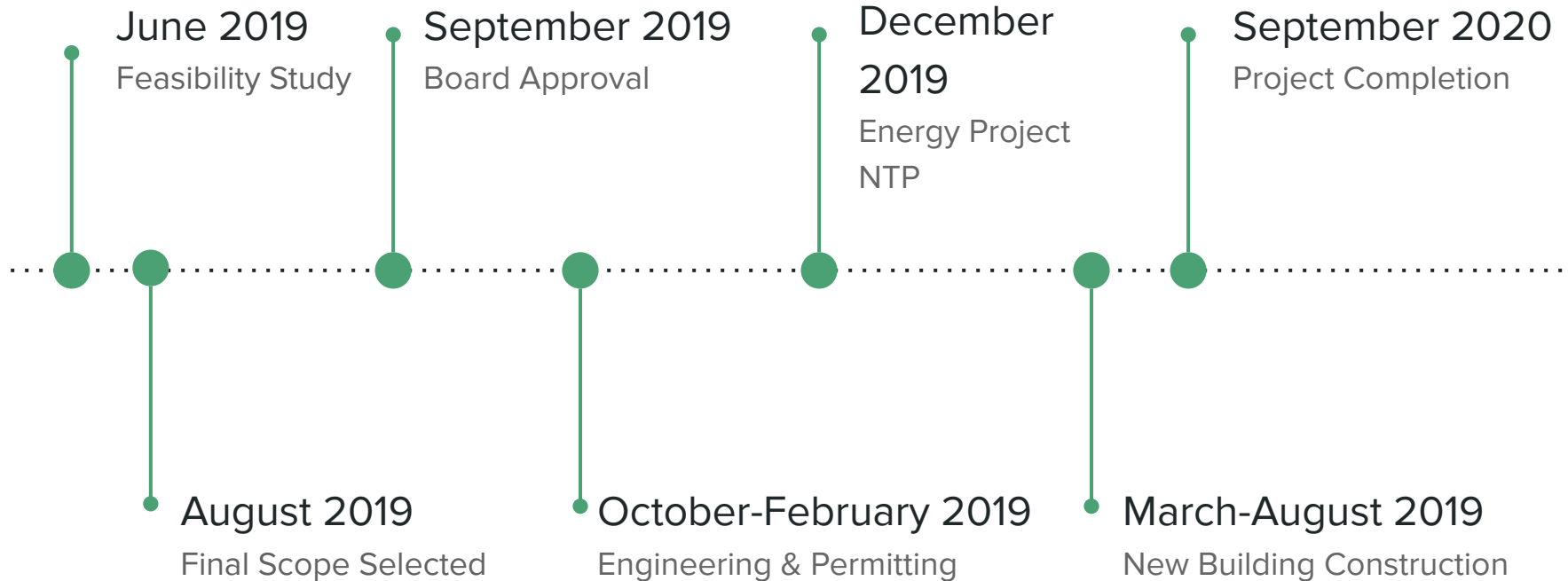
25 Year IRR:	13%
25 Year NPV (6% DR):	\$149,000
Payback Period:	<9 years
Cumulative Savings (25yr):	\$510,000
Annual Utility Savings:	\$21,000
Annual LED/HVAC Savings:	\$7,000
Annual PV Savings:	\$14,000
Carbon Offset:	3.6 Million lbs.
Equivalent of 186,000 gallons of gasoline	

***all performance estimates are based on standard industry assumptions
and will be confirmed upon further engineering*

Cash Flow – Solar PV, LED, PG&E OBF, Solar Service Agreement

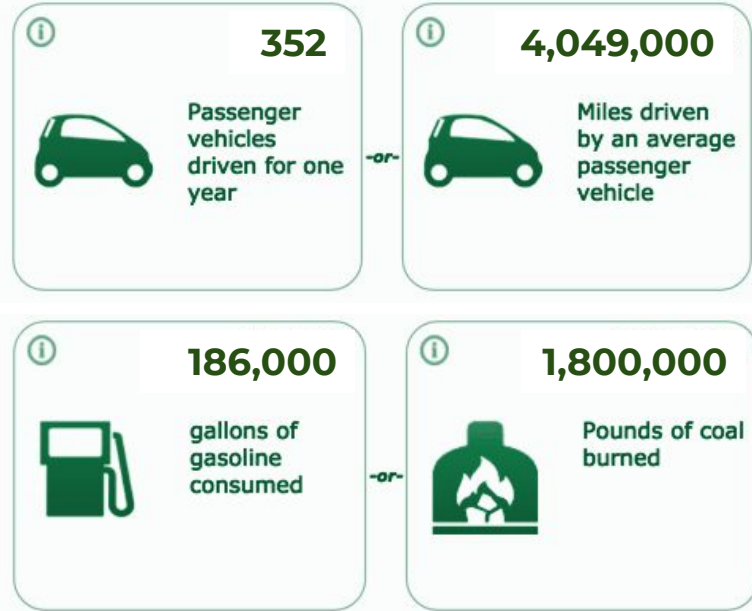
Year	Initial Project Investment	Utility Savings	OBF Payments	O&M Expenses	Net Cash Flow	Cumulative Benefit
0	(\$160,998)				(\$160,998)	(\$160,998)
1		\$20,685	(\$5,381)	(\$589)	\$14,714	(\$146,284)
2		\$21,441	(\$5,381)	(\$604)	\$15,455	(\$130,829)
3		\$22,224	(\$5,381)	(\$619)	\$16,224	(\$114,605)
4		\$23,036	(\$5,381)	(\$635)	\$17,020	(\$97,585)
5		\$23,878	(\$5,381)	(\$651)	\$17,846	(\$79,740)
6		\$24,749	(\$5,381)	(\$667)	\$18,701	(\$61,039)
7		\$25,653	(\$5,381)	(\$684)	\$19,588	(\$41,451)
8		\$26,589	(\$5,381)	(\$701)	\$20,506	(\$20,945)
9		\$27,558	(\$5,381)	(\$718)	\$21,459	\$514
10		\$28,563		(\$736)	\$27,827	\$28,341
11		\$29,604		(\$755)	\$28,850	\$57,190
12		\$30,683		(\$773)	\$29,909	\$87,100
13		\$31,800		(\$793)	\$31,008	\$118,108
14		\$32,958		(\$813)	\$32,146	\$150,253
15		\$34,158		(\$833)	\$33,325	\$183,579
16		\$35,401		(\$854)	\$34,547	\$218,126
17		\$36,689		(\$875)	\$35,814	\$253,940
18		\$38,023		(\$897)	\$37,126	\$291,065
19		\$39,405		(\$919)	\$38,485	\$329,551
20		\$40,837		(\$942)	\$39,894	\$369,445
21		\$27,027		(\$966)	\$26,061	\$395,506
22		\$27,952		(\$990)	\$26,962	\$422,468
23		\$28,907		(\$1,015)	\$27,893	\$450,361
24		\$29,895		(\$1,040)	\$28,855	\$479,215
25		\$30,915		(\$1,066)	\$29,849	\$509,064
TOTAL		\$738,629	(\$48,433)	(\$20,133)	\$509,064	

Proposed Schedule



The sum of the greenhouse gas emissions from the energy efficiency savings and solar energy produced is equivalent to 3.7 million pounds of Carbon Dioxide.

This is equivalent to greenhouse gas emissions from:



Case Study

60.4 kW Rooftop Solar PV

Pacific Collegiate School

Santa Cruz, CA

Project returns:

25 Year IRR:	16%
25 Year NPV (6% DR):	\$185,000
Simple Payback:	4 years
Prop 39 Funding:	\$252,000

Cumulative Savings (25yr): \$629,000*

Annual Utility Savings: \$18,509

*assumes 3% PG&E escalation



Case Study

55.1 kW Rooftop Solar PV
LED Lighting Upgrade
New TPO Roofing

Holy Cross Church and School

Santa Cruz, CA

Savings:

Annual PG&E Bill Offset	86%
Efficiency Savings	\$30,387
Solar Savings	\$18,607
Annual Utility Savings:	\$48,994
Cumulative Savings (25yr):	\$1,092,586



Case Study

*49 kW Carport Solar PV
LED Lighting Upgrade*

Monterey Diocese Headquarters

Monterey, CA

Savings:

<i>Annual PG&E Bill Offset</i>	<i>90%</i>
<i>Efficiency Savings</i>	<i>\$5,100</i>
<i>Solar Savings</i>	<i>\$14,750</i>
<i>Annual Utility Savings:</i>	<i>\$19,850</i>
<i>Cumulative Savings (25yr):</i>	<i>\$425,375</i>



Our Clients



BOYS & GIRLS CLUB



Graniterock®



a Western Digital brand



Gunlocke®



WESTIN®
HOTELS & RESORTS



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joie de vivre
HOTELS  RESORTS



Thank you.