



Energy CLASS Prize – Phase II Presentation

Antonio Guevara, Elda Pruneda
May 2024





A Better Building. A Better Bottom Line. A Better World.

Buildings that have earned ENERGY STAR certification from the U.S. Environmental Protection Agency use 35% less energy and cause 35% fewer greenhouse gas emissions than their peers.

energystar.gov/buildings



IDEA Public Schools – Energy Stars

Who We Are



IDEA Public Schools believes that each and every child can go to college. Since 2000, IDEA Public Schools has grown from a small school with 150 students to a national network of tuition-free, K-12 public charter schools in the United States.

Currently, the network serves over 80,000 college-bound students in 143 schools across Texas and its affiliates. IDEA has been recognized as a “Great Place to Work” and received national rankings in *The Washington Post*, the U.S. Department of Education’s list of Blue Ribbon Schools, and *U.S. News & World Report’s* Top High Schools lists. For the last 16 years, IDEA has sent nearly 100% of its graduates to college and remains on track to uphold that legacy.



Energy CLASS Prize – Team



Profile:

Antonio Luis Guevara

antonio.guevara@ideapublicschools.org

956-509-7172

Director of Energy Services, IDEA Public Schools

Education:

B.S. Electrical Engineering, Texas A&M University

MBA Finance, Southern Methodist University

Experience:

- Semiconductor Manufacturing (Texas/Mexico/China)
- Facilities/Energy Management (K-12/Higher Education)



Profile:

Elda Pruneda

elda.pruneda@ideapublicschools.org

956-678-2403

Director of Facilities Budget, IDEA Public Schools

Education:

B.S. Business Admin., University of Texas Pan-American

MBA, University of Texas Pan-American

Experience:

- Financial Management (Coca Cola Enterprises)
- Facilities Management (K-12/Higher Education)

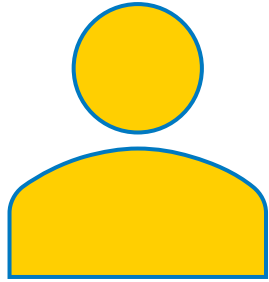




Energy CLASS Prize

Phase I - Projects

Energy CLASS Prize – Phase I



Dedicated
Energy Manager



Gap
Analysis



Energy Star
Certifications



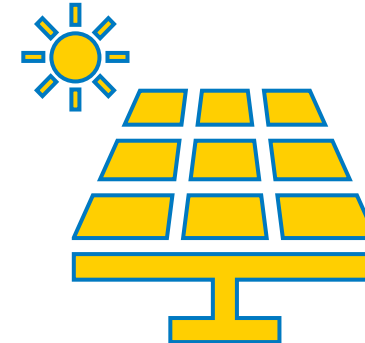
Energy Cost
Savings



Training &
Certifications



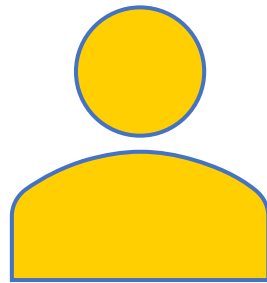
Energy Treasure
Hunts



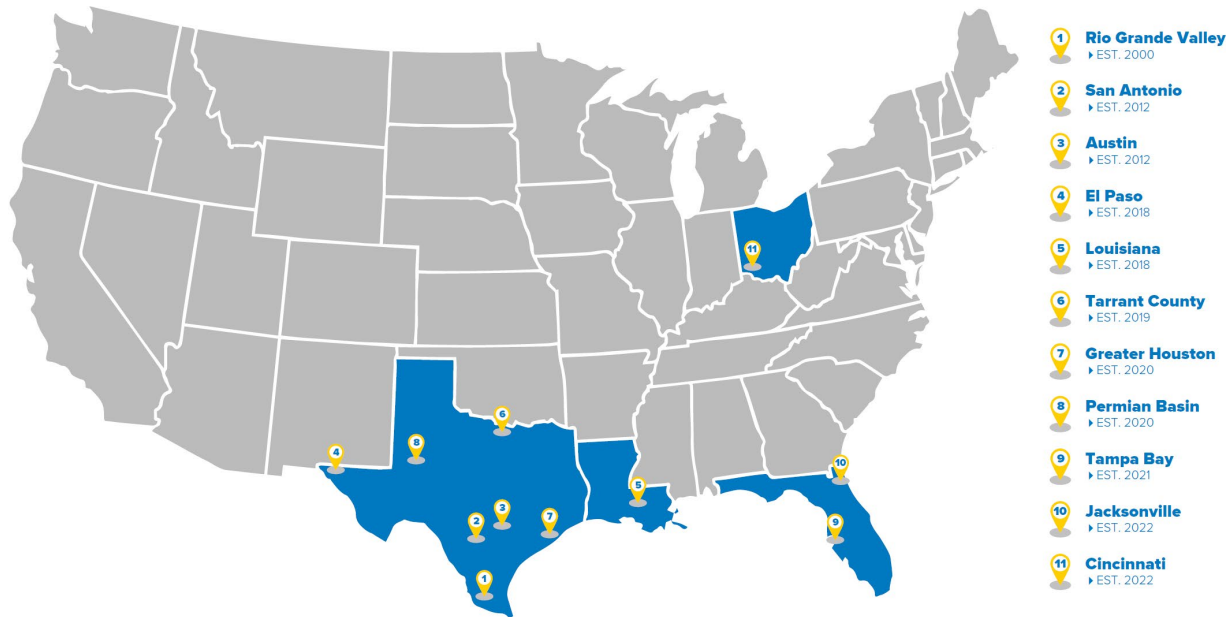
Renewable
Energy



Dedicated Energy Manager



Challenge



Decentralized Facilities Management Approach

- **72 Campus Facilities Managers (FMs)**
 - Wide variation in experience and skillset
 - Minimal input on hiring decision
 - Report directly to campus leadership
- **Lack of Centralized Energy Manager**
 - 7.5 million sq ft of building space
 - 7 different BAS systems
 - Multiple school design models
 - No appetite to “duplicate” energy conservation measures (ECMs); FM responsibility

Pivotal Moment



PHASE

1

Application

Submissions due by February 2023

- Up to 25 local educational agencies (LEAs) selected
- \$100,000 in cash prizes to each selected LEA to support energy management professionals-in-training in Phase 2

Energy CLASS Prize Funding (\$100K) helped to justify a dedicated resource to focus on Energy Management Initiatives

New Role:

Director of Energy Services



Training & Certifications



Training & Certifications



The Association of Energy Engineers certifies that

Antonio L. Guevara

has completed the prescribed standards for certification, has demonstrated a high level of competence and ethical fitness, and is hereby granted the title of

Certified Energy Manager

Valid: August 16, 2023 - December 31, 2026 | Certification ID: 28234



Certification Board Chair

Certification Director



Metasys System Extended Architecture for Building Operators

2.0 CEU

Awarded to
Antonio Guevara



Course Administrator

Manager of Technical Training

October 4, 2023
Date



ENERGY MANAGEMENT PROFESSIONAL

Energy Management Professional Seminar & Exam

Monday, April 29 – Tuesday, April 30

This **two-day, six-hour** course provides an overview and refresher on energy management and how it can be applied. Throughout the session, the instructor weaves in the EMA commissioning-based approach to energy management to maximize energy savings and optimize building performance. This course delves into essential topics covering resiliency / reliability and security, energy auditing, ECMs and FIMs, project closeout, and more.

Note: Individuals interested in EMP certification must submit a completed EMP Application 14 days in advance.

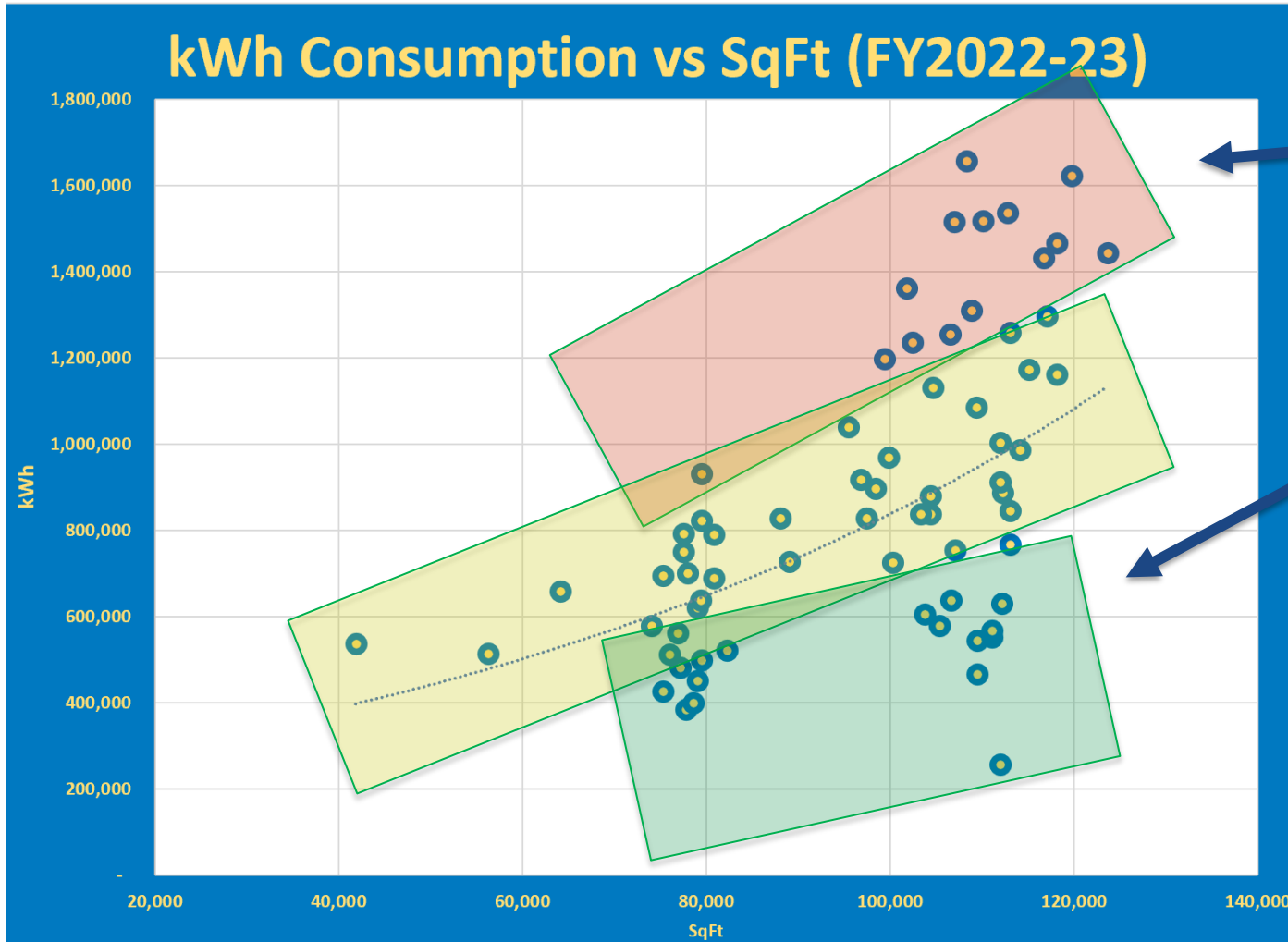
Note: Attendance at the EMP Seminar is NOT a prerequisite for taking the EMP Exam. Questions? Contact info@energymgmt.org or visit www.energymgmt.org



Gap Analysis



Gap Analysis



Legacy RGV
campuses are here...
so is Hou/Tampa!

All El Paso & TaCo
Schools are here

What can we learn from the
sites that are doing well in
green and apply it to the rest
of our site portfolio?



Energy Treasure Hunts





ENERGY STAR Treasure Hunts



During an Energy Treasure Hunt, teams walk around a facility looking for quick ways to save energy. Those quick fixes can add up to big savings. Hundreds of organizations have used Energy Treasure Hunts to *reduce their facilities' energy use by up to 15 percent*. Are you and your crew ready to find the treasure buried within your facilities?

Energy Treasure Hunts – Examples

Campus	Treasures Found	FM Action/Next Steps
Bridge	- Occupancy Schedules expired	- Removed/extended occupancy schedule expiration date - Implemented calendar for occupancy schedules
Price Hill	- BAS schedules not set - RTUs were on "local mode" - Heating mode overridden to "ON"	- Trip to Cinci to address this and multiple other legacy issues with the BAS/HVAC/HW Systems
Valley View	- BAS not active since renovations	- Engaged with IT/Contractor to enable BAS setup at Valley View
Riverview	- Clg/Htg deadband not reflected in setpoints	- Trained/Adjusted Clg/Htg setpoints to established "effective" setpoints - Implemented calendar for occupancy schedules
South Flores	- RTUs not following established occupancy schedules - Fan supply status "ON" but command "OFF"	- Engage with BLCCS to determine why RTUs not following supply fan commands
San Benito	- Some Metasys controllers in fault mode and not following setpoints - CO2 sensors need calibration or replacement	- Engage with Akron controls to evaluate impacted controllers and calibrate CO2 sensors
Ewing Halsell	- Some RTUs not attached to occupancy schedules and running 24/7	- RM helped to develop new occupancy schedules and assigned impacted equipment to newly established schedule
Mission	- Ph III Metasys controller offline, not following setpoints/schedules	- Rebooted controller and the system came back online, occupancy schedules are not active for those spaces
Toros	- DOAS RTU not following occupancy schedule, running 24/7	- Replaced faulty controller on the RTU, occupancy schedule is now being followed accordingly
Brackenridge	- Occupancy schedules had multiple equipment operating after-hours	- Standardized occupancy schedules and implemented occupancy calendar

Energy Treasure Hunts – Case Study



Account Detail		
Previous Balance		26,796.67
Payment Received	(08/22/2023)	-26,796.67
Remaining Balance		\$0.00
Current Charges		
Customer Charge		13.39
Energy Charge		12,416.09
Formula Rate Plan	@ 74.3595%	9,130.96
Storm Restoration Offset		-454.30
Fuel Adjustment	219500 kWh @ \$0.017782	3,903.15
Federal Mandated EAC Rider	219500 kWh @ \$0.000051	11.19
Municipal Franchise Fee		625.51
Total Metered Charges (Contract 17195615)		\$25,645.99
Storm Restoration Charge		3,807.63
Current Month Energy Charges		\$29,453.62

Account Detail		
Previous Balance		20,635.95
Payment Received	(10/24/2023)	-20,635.95
Remaining Balance		\$0.00
Current Charges		
Customer Charge		13.39
Energy Charge		6,147.82
Formula Rate Plan	@ 74.3595%	4,498.73
Storm Restoration Offset		-223.84
Fuel Adjustment	108000 kWh @ \$0.021855	2,360.34
Federal Mandated EAC Rider	108000 kWh @ \$0.000045	4.86
Municipal Franchise Fee		320.03
Total Metered Charges (Contract 17195615)		\$13,121.33
Storm Restoration Charge		1,906.70
Current Month Energy Charges		\$15,028.03

Utility Bill/Energy Consumption cut in half after two months!!!



Energy STAR Certifications



Energy STAR Certifications

OUR MISSION

Designing holistic built environment, optimizing comfort, efficiency, and economy for a sustainable future.

OUR VISION

To be an indispensable partner to our clients. To offer all team members a gratifying career. To make a difference in our community and to have a positive impact on our planet.

OPTIMIZING COMFORT, EFFICIENCY, AND ECONOMY



TEXAS OFFICE

1126 South Commerce St., Harlingen, TX 78550
Telephone: (956) 230-3435

NORTH CAROLINA OFFICE

447 Dartmouth Road, Winston-Salem, NC 27104
Telephone: (336) 499-9794



UnitedHealthcare MRF

MEP Engineering Firm Partnership
Energy Star Building Certification Application x 4 (pro-bono)

Energy STAR Certifications



ENERGY STAR® Application for Certification

82

ENERGY STAR®
Score¹

IDEA Headquarters

Registry Name: IDEA Headquarters
Property Type: Office
Gross Floor Area (ft²): 50,100
Built: 2016

For Year Ending: Jun 30, 2023²
Date Application Becomes Ineligible: Oct 28, 2023

99

ENERGY STAR®
Score¹

IDEA Elsa

Registry Name: IDEA Elsa
Property Type: K-12 School
Gross Floor Area (ft²): 113,666
Built: 2018

For Year Ending: Jun 30, 2023²
Date Application Becomes Ineligible: Oct 28, 2023

98

ENERGY STAR®
Score¹

Idea Rio Grande City

Registry Name: Idea Rio Grande City
Property Type: K-12 School
Gross Floor Area (ft²): 113,142
Built: 2017

For Year Ending: Jun 30, 2023²
Date Application Becomes Ineligible: Oct 28, 2023

100

ENERGY STAR®
Score¹

IDEA Edgemere

Registry Name: IDEA Edgemere
Property Type: K-12 School
Gross Floor Area (ft²): 110,010
Built: 2021


For Year Ending: Jun 30, 2023²
Date Application Becomes Ineligible: Oct 28, 2023

Energy STAR Certifications

ENERGY STATS




IDEA Edgemere El Paso, Texas



ENERGY STAR Certified Building
Since 2019




ENERGY STAR Score:
100 /100

OUTPERFORMS **100%**
OF SIMILAR BUILDINGS NATIONWIDE


USES **61%** LESS ENERGY PER SQUARE FOOT
THAN THE NATIONAL MEDIAN

 Compared to the national median, we prevent **493 metric tons** of greenhouse gas emissions each year.


THIS BUILDINGS SAVINGS EQUAL:

-  Carbon dioxide emissions from **96** homes' electricity use for one year
-  Carbon sequestered by **588** acres of U.S. forests in a year
-  Emissions from **110** passenger vehicles in one year

ENERGY STAR® is the simple choice for energy efficiency. For more than 20 years, EPA's ENERGY STAR program has been America's resource for saving energy and protecting the environment. Join the millions making a difference at energystar.gov.




LEARN MORE AT energystar.gov



ENERGY STATS




IDEA Elsa Elsa, Texas




ENERGY STAR Certified Building
Since 2023



ENERGY STAR Score:
99 /100

OUTPERFORMS **99%**
OF SIMILAR BUILDINGS NATIONWIDE

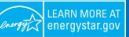
USES **59%** LESS ENERGY PER SQUARE FOOT
THAN THE NATIONAL MEDIAN

 Compared to the national median, we prevent **464 metric tons** of greenhouse gas emissions each year.


THIS BUILDINGS SAVINGS EQUAL:

-  Carbon dioxide emissions from **90** homes' electricity use for one year
-  Carbon sequestered by **553** acres of U.S. forests in a year
-  Emissions from **103** passenger vehicles in one year



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LEARN MORE AT energystar.gov



ENERGY STATS

IDEA Rio Grande City Rio Grande City, Texas



ENERGY STAR Certified Building
Since 2019




ENERGY STAR Score:
98 /100

OUTPERFORMS **98%**
OF SIMILAR BUILDINGS NATIONWIDE


USES **58%** LESS ENERGY PER SQUARE FOOT
THAN THE NATIONAL MEDIAN

 Compared to the national median, we prevent **444 metric tons** of greenhouse gas emissions each year.


THIS BUILDINGS SAVINGS EQUAL:

-  Carbon dioxide emissions from **86** homes' electricity use for one year
-  Carbon sequestered by **529** acres of U.S. forests in a year
-  Emissions from **99** passenger vehicles in one year

ENERGY STAR® is the simple choice for energy efficiency. For more than 20 years, EPA's ENERGY STAR program has been America's resource for saving energy and protecting the environment. Join the millions making a difference at energystar.gov.



LEARN MORE AT energystar.gov




Energy STAR Certifications



JENNIFER EGGLESTON

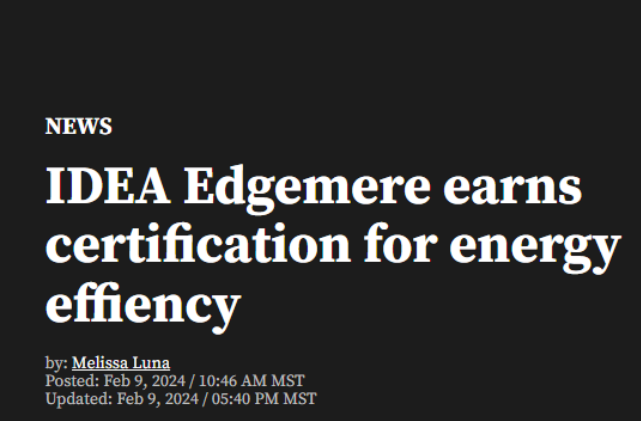
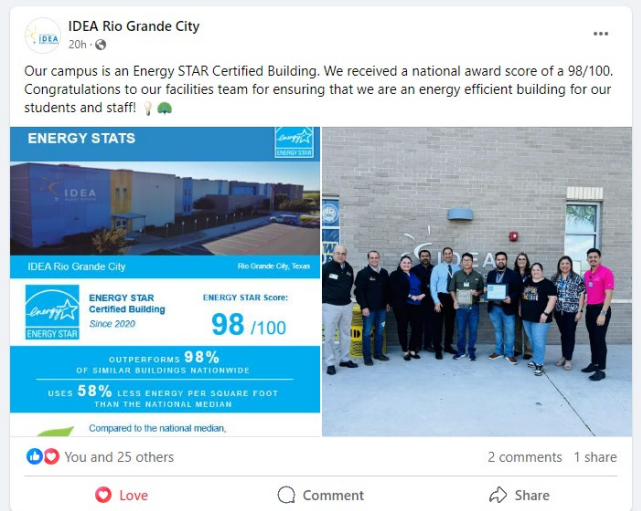
Three IDEA Public Schools Campuses Recognized for Energy Efficiency by U.S. Environmental Protection Agency

February 1, 2024 | Events & Announcements

Three IDEA Public Schools campuses in Texas – IDEA Elsa, IDEA Rio Grande City, and IDEA Edgemere – have earned the prestigious ENERGY STAR certification from the U.S. Environmental Protection Agency (EPA). This certification recognizes their superior energy performance and commitment to sustainability.

ENERGY STAR certification signifies that these campuses rank in the top 25 percent of buildings nationwide in energy efficiency, considering factors such as occupancy, hours of operation, and other key metrics. It is a testament to IDEA Public Schools' dedication to creating environmentally responsible and high-performance learning environments.

<https://ideapublicschools.org/blog/three-idea-public-schools-campus-recognized-for-energy-efficiency-by-u-s-environmental-protection-agency/>

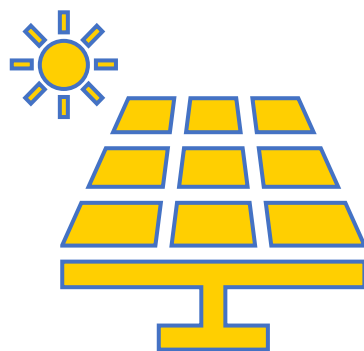


<https://www.ktsm.com/news/idea-edgemere-earns-certification-for-energy-efficiency/>





Renewable Energy



Renewable Energy – HQ PV System



Solar Install At A Glance

- Commercial Installation
- 364.48 kW Photovoltaic (PV) System
- 1,072 Trina Solar Panels
- SolarEdge Inverters
- 75% Energy Savings
- More than 500,000 kWh solar energy production each year

Weslaco, Texas Commercial Solar Panel Install

The installation of this 364 kW solar power system for IDEA Public Schools in Weslaco, Texas will generate enough power to offset the annual equivalent of 947,432 miles driven by the average passenger vehicle, 422,924 pounds of coal being burned, or 455 acres of forest sequestering carbon. The project features over 1,000 Trina Solar modules with SolarEdge inverters.

Renewable Energy – Austin, TX PV Project



PROPOSED System Layout



410.4 kW System

Consisting of 760 solar panels installed.



Significant Renewable Offset

The system will offset 568,000 kWh of estimated annual usage the facility consumes.



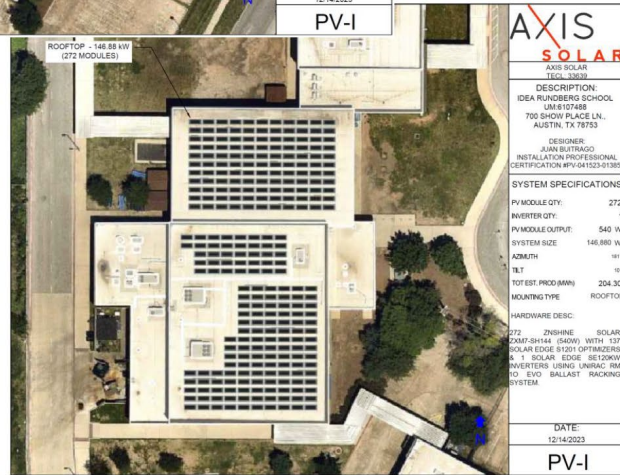
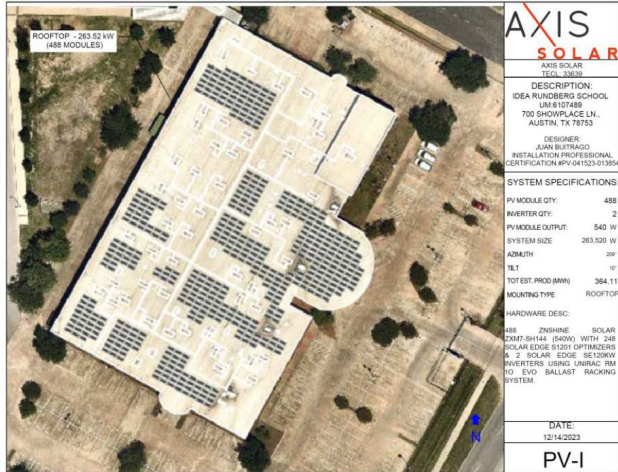
Tax Savings

System will generate potential tax credits of \$312,000.



Immediate Savings

Options will substantially increase building value and savings.



Solar PV Project:

- 6 campuses in Austin region
- 1.03MW system size
- Rebate from local utility company - Austin Energy
- ITC Tax Credits (Inflation Reduction Act of 2022)
- Simple Payback = 2.1 years
- NPV (@5%) = \$1,972,000

Project expected to commence on June 1, 2024!!!



Energy Cost Savings



Energy Cost Savings

> **\$1.3 Million in Cost Savings FYTD (Jul 23 – Mar 24)**

IDEA Facilities Monthly Dashboard - kWh/SqFt					
	kWh Usage/Sq Ft Annual Goal	kWh Usage/Sq Ft Month End Target	kWh Usage/Sq Ft Month Actual	Actual	Cost Savings
		Mar-24	Mar-24	Cost/kWh	vs Goal
DISTRICT	11.24	8.49	6.84	\$ 0.113	\$ 1,385,374
TEXAS	11.47	8.75	6.65	\$ 0.108	\$ 1,499,113
UPPER RGV	12.39	9.48	7.45	\$ 0.104	\$ 355,083
LOWER RGV	12.35	9.32	7.59	\$ 0.111	\$ 236,190
SAN ANTONIO	11.49	8.62	6.74	\$ 0.108	\$ 307,512
AUSTIN	11.09	8.35	5.91	\$ 0.120	\$ 244,440
HOUSTON	9.40	7.11	6.26	\$ 0.091	\$ 23,451
TARRANT COUNTY	10.00	7.55	6.04	\$ 0.095	\$ 61,893
EL PASO	10.12	7.70	3.64	\$ 0.123	\$ 259,147
PERMIAN BASIN	9.40	7.05	5.83	\$ 0.088	\$ 11,398
LOUISIANA	11.07	8.36	9.32	\$ 0.134	\$ (34,957)
FLORIDA	9.55	7.22	7.20	\$ 0.147	\$ 1,049
OHIO	7.90	5.87	9.16	\$ 0.117	\$ (79,831)



Energy CLASS Prize

Phase I – Lessons Learned

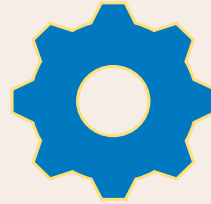
Energy CLASS Prize – Lessons Learned

“It takes both Energy Efficient Building Design and effective O&M practices to deliver exceptional results in Energy Management”



Building Design

- Design Standard
 - Chilled Water
 - RTUs w/HGRH
 - DOAS/ERU
 - Building Envelope
- 3rd Party CxA
- Standardized BAS
- Warranty Process



Operations

- FM Selection/Hiring
- Critical Setpoints
- Robust BAS Training
- Control the Off-Hours
- Eliminate Overrides
- RTU Local Mode
- Pursue Grant Funding
- Leverage Partnerships



Maintenance

- Fidelity to PM Schedule
- Sensor Calibration
 - CO2
 - Humidity
 - Temp
- OAD Mechanisms
- BAS Resiliency
- HVAC Repairs



Energy CLASS Prize

Phase II – Proposed Project

Energy Star Building Certifications (25 sites)

How will the \$50K funding be used in Phase II?

- Partner with MEP Engineering firm to continue to process Energy Star Building Certifications at an estimated cost of \$2K per site x 25 sites = \$50,000

Rationale:

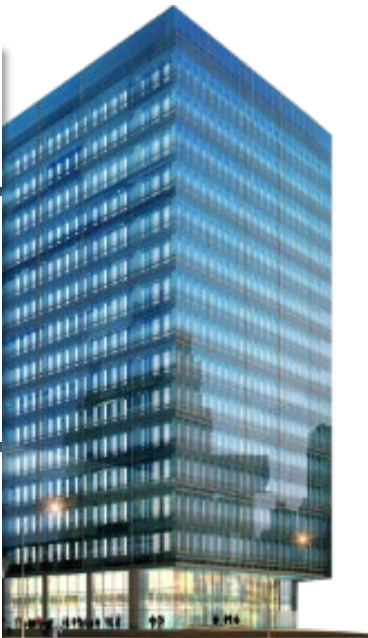
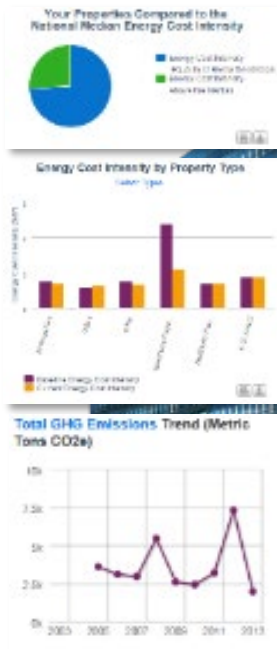
- We had an overall positive experience during the processing of 4 Energy Star Building Certifications including:
 - Use of EPA Portfolio Manager
 - ASHRAE Level 1 energy audits
 - Confirmation of energy efficient building design standards
 - Implementation of efficient/effective O&M practices

Index	Campus/Site	Address
1	IDEA Alamo	325 E FM 495, Alamo, Texas 78516
2	IDEA Brownsville	4395 Paredes Line Road, Brownsville, Texas 78526
3	IDEA Donna	401 S 1st St, Donna, Tx 78537
4	IDEA Edinburg	2553 N Roegiers Road, Edinburg, Texas 78541
5	IDEA Frontier	2800 S Dakota Avenue, Brownsville, Texas 78521
6	IDEA Harlingen	24240 Chester Park Rd, Harlingen, Texas 78552
7	IDEA La Joya	725 E. Expressway 83, La Joya, TX 78560
8	IDEA Los Encinos	5400 S. Ware Rd., McAllen, Texas 78503
9	IDEA McAllen	201 N Bentsen Road, McAllen, Texas 78501
10	IDEA Mission	1600 S Schuerbach Road, Mission, Texas 78572
11	IDEA North Mission	2706 N Holland Avenue, Mission, Texas 78572
12	IDEA Owassa	1000 E Owassa Road, Pharr, Texas 78577
13	IDEA Palmview	2313 W Mile 3 Rd, Mission, Texas 78574
14	IDEA Pharr	600 E Las Milpas Road, Pharr, Texas 78577
15	IDEA Quest	14001 N Rooth Road, Edinburg, Texas 78541
16	IDEA Riverview	30 Palm Boulevard, Brownsville, Texas 78526
17	IDEA Robindale	3802 E. Ruben Torres Sr. Blvd, Brownsville, Texas 78521
18	IDEA San Benito	2151 Russell Lane, San Benito, Texas 78586
19	IDEA San Juan	600 E Sioux Road, San Juan, Texas 78589
20	IDEA Sports Park	6650 Old Alice Rd., Brownsville, TX 78526
21	IDEA Toros	3300 E. Texas Rd, Edinburg, Texas 78539
22	IDEA Tres Lagos	5200 Tres Lagos Boulevard, McAllen, TX 78504
23	IDEA Weslaco	2931 E Sugar Cane Drive, Weslaco, Texas 78599
24	IDEA Weslaco Pike	1000 E Pike Boulevard, Weslaco, Texas 78596
25	IDEA Headquarters	2115 W Pike Blvd, Weslaco, Texas 78596

ENERGY STAR for Buildings

Delivering environmental benefits and financial value through superior energy efficiency.

Benchmark and assess



Improve



Utility Genius
Rebate Finder

ENERGY STAR®
**Cash Flow
Opportunity
Calculator**

Know when to finance energy efficiency projects



Earn recognition





IDEA

Public Schools