

**UNIVERSITY OF COLORADO  
ANSCHUTZ MEDICAL CAMPUS**

# **CAMPUS SAFETY & PREPAREDNESS FACILITY - PV CANOPY**

**DESIGN REVIEW BOARD PRESENTATION**

November 16, 2021



# Project Directory & Acknowledgments

## Owner

**University of Colorado**  
**Anschutz Medical Campus**

## Design/Build Team

**Saunders Construction**  
General Contractor

**Anderson Mason Dale Architects**  
Architect

**Kiel Moe, FAAR, AIA**  
Gerald Sheff Chair of Architecture, McGill University

**S.A. Miro Inc.**  
Civil Engineer

**Wenk Associates**  
Landscape Architect

**KL&A Engineers & Builders**  
Structural Engineer

**Cator Ruma & Associates**  
MEP Engineer

**Ambient Energy**  
Energy Modeling

## Acknowledgments

**Participants**  
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# Project Information

## Campus Safety & Preparedness Facility

University of Colorado, Anschutz Medical Campus  
(CU AMC)

Project Address  
13309 E 17th Pl, Aurora, CO 80045

Total Floor Area  
26,100 SF





# Executive Summary

The University of Colorado Anschutz Medical Campus has undertaken a strategic initiative in the Campus Safety and Preparedness Facility. The proposed facility will accommodate the immediate and long-term safety needs of a growing campus. The building will provide a new, consolidated headquarters for the campus safety and preparedness team including Police Operations, Electronic Security, Emergency Communications, and Emergency Management. And, the new facility will have a path to becoming the campus' first **net zero energy building**.

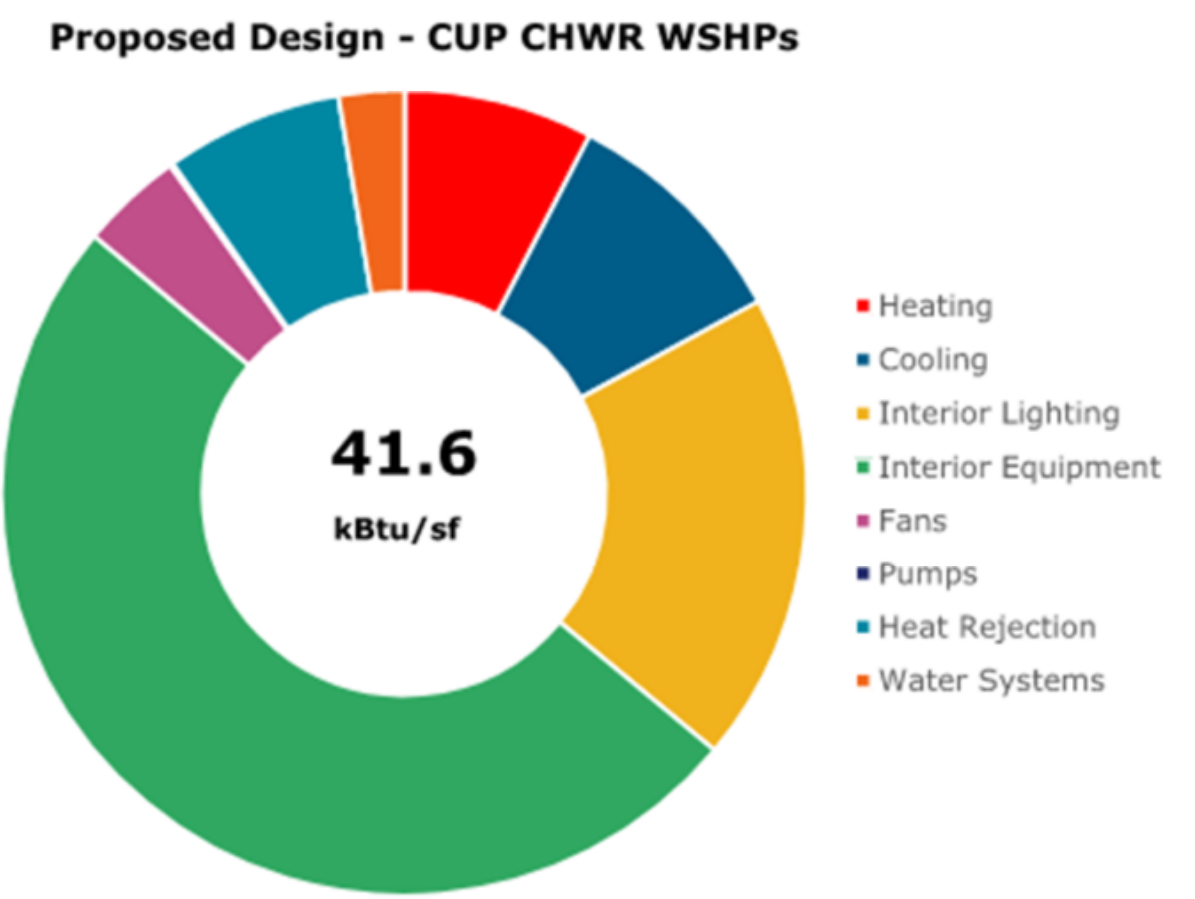
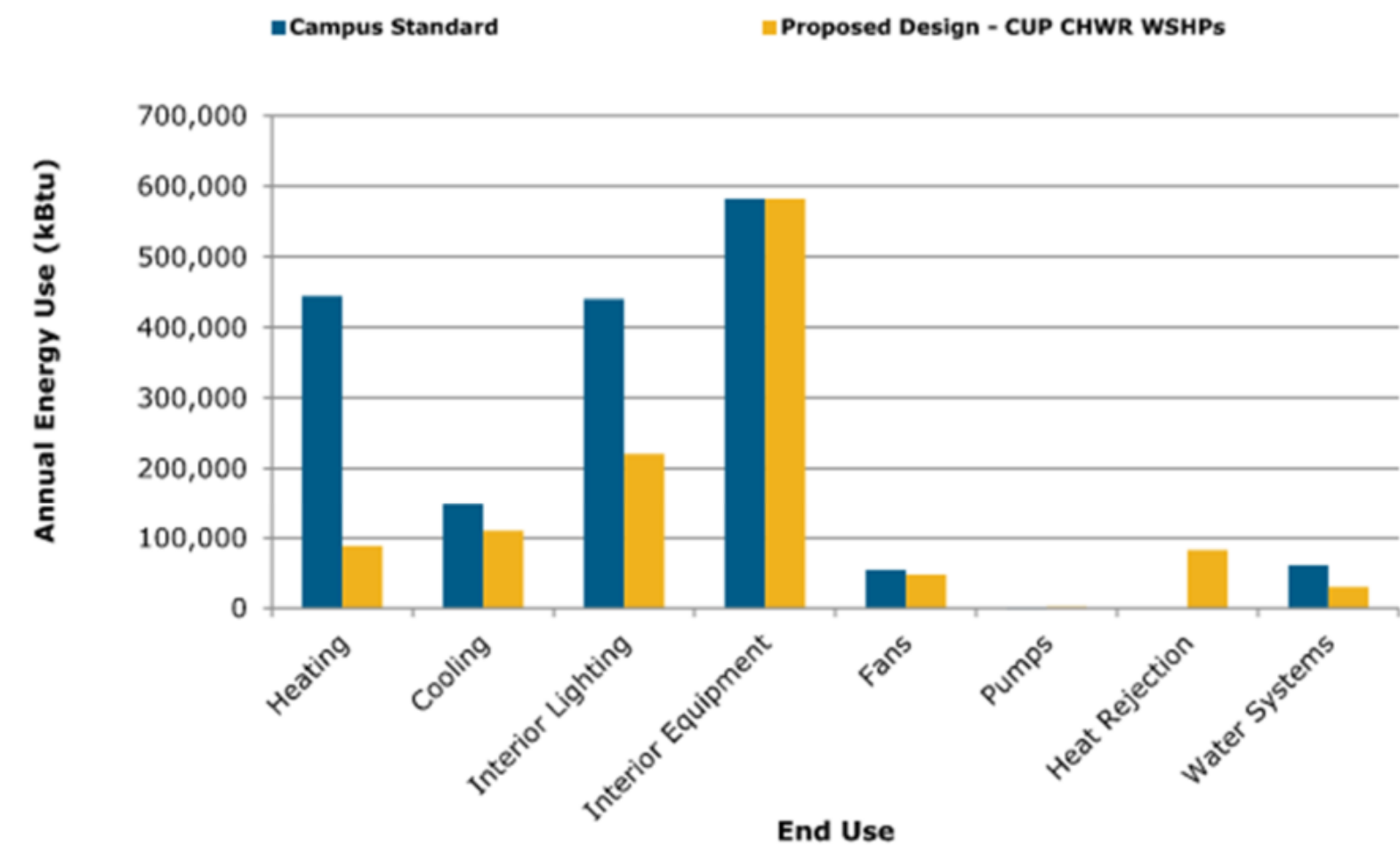
The Campus Safety and Preparedness Facility is a 27,020 square foot building at the north frontage of 17th Place between Victor Street and Wheeling Street. Site development will consist of public parking, secure fleet parking, and a secure access drive.

In order to offset the building's annual energy use as a path to net zero, a solar photovoltaic system is being planned for the site. The Energy Use Intensity is targeted at 42 kBtu/sf per year, and therefore a roughly 240 kW system is required to offset that need. Roof mounted photovoltaic panels will provide almost half of that capacity, and the remaining PV panels will be installed on top of parking canopy structures in the fleet parking lot. The Parking Canopies will provide the added amenity of protecting the fleet from ice and snow, and will clearly distinguish this as a campus building with sustainability and innovation as a primary driver.



ENERGY COST RESULTS	First Cost Mechanical	Total Energy Cost	Energy Cost Index	Electricity			District Energy		Savings	
	(\$/sf)	(\$/yr)	(\$/sf)	Total Electric Cost	Use	Facility Demand	Cooling	Heating	Energy Cost	Energy Cost %
Campus Standard	\$56.14	\$44,554	\$1.59	\$35,231	\$11,673	\$23,558	\$3,139	\$6,184		
Proposed Design - CUP CHWR WSHPs	\$49.76	\$37,846	\$1.35	\$36,097	\$10,669	\$25,428	\$1,110	\$639	\$6,708	15.1%

ENERGY USE RESULTS	PV Size for NZE	Energy Use Index	Electricity			District Energy		Savings	
	kW	(kBtu/sf*yr)	Use (kWh/yr)	Annual Demand (kW/yr)	Peak Demand (kW/mo)	Cooling (MBtu/yr)	Heating (MBtu/yr)	Energy Use %	
Campus Standard	311	61.9	333,272	1,211	103	149	445		
Proposed Design - CUP CHWR WSHPs	217	41.6	325,528	1,302	114	53	30	32.8%	



ENERGY MODEL RESULTS

**41.6 eui**

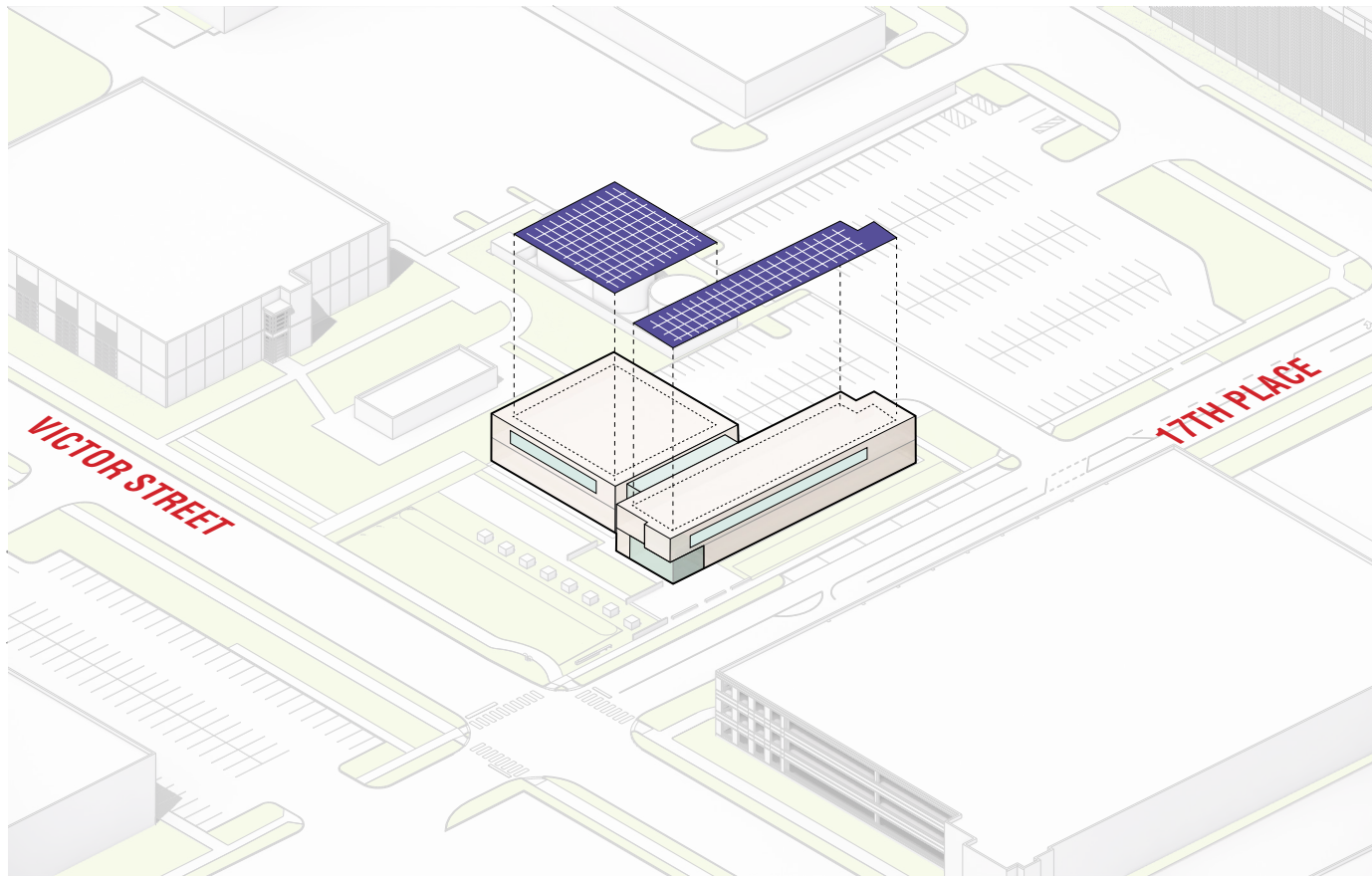
ENERGY USE INTENSITY **RESULT**



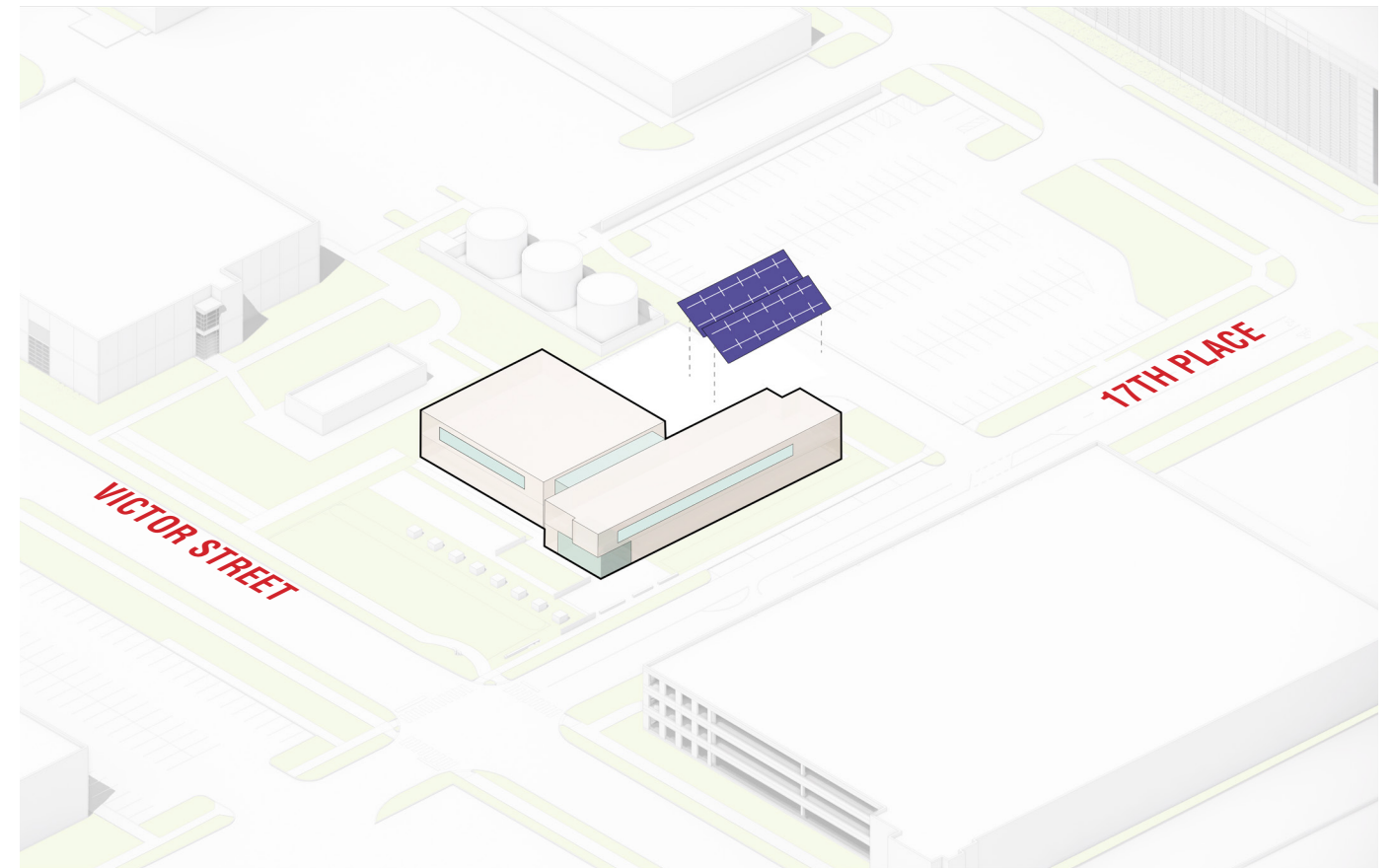


**233kW**

**PHOTOVOLTAIC OFFSET FOR  
NET ZERO ENERGY**

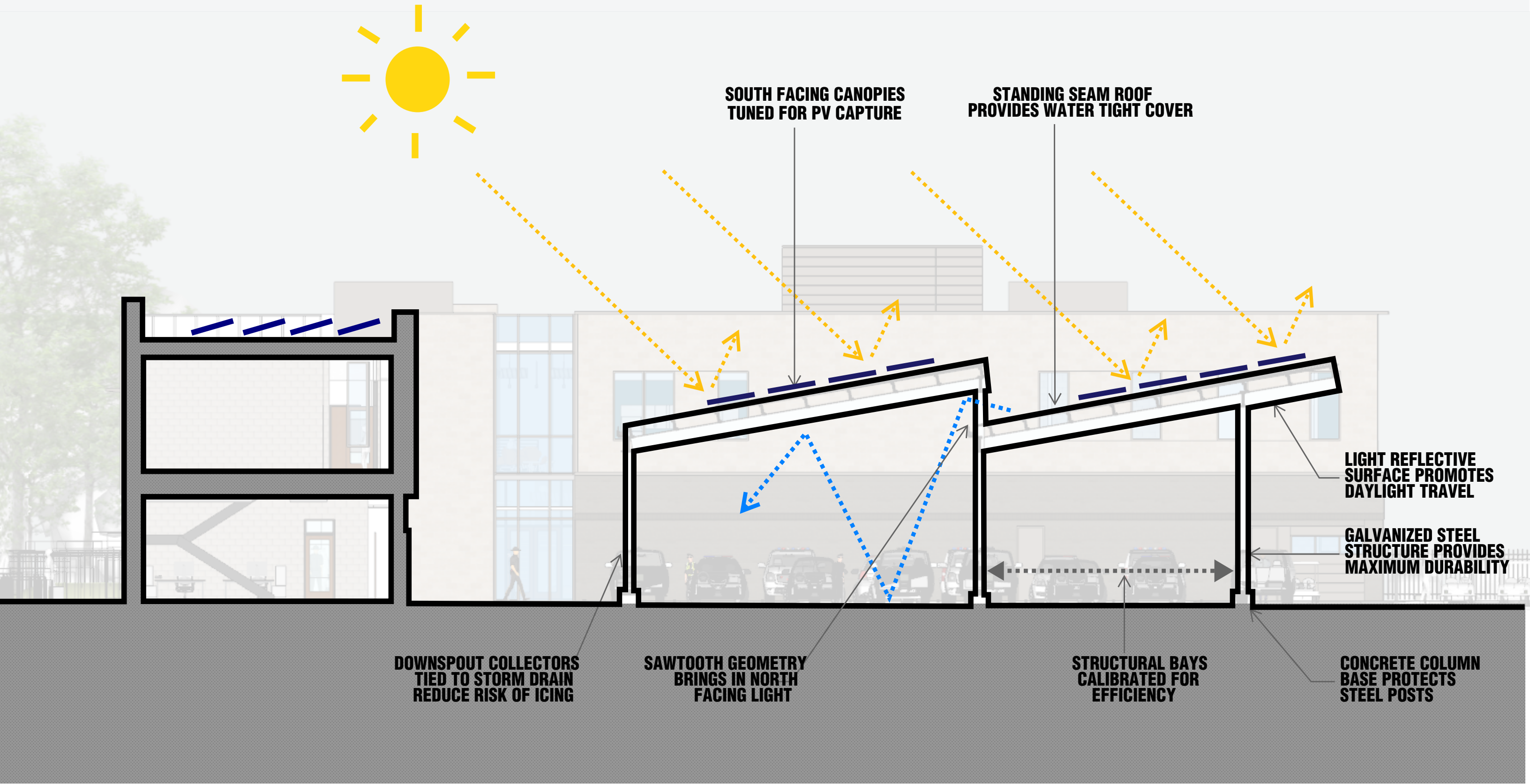


**ROOF MOUNTED PHOTOVOLTAIC PANELS**  
**110 kW ROOF**



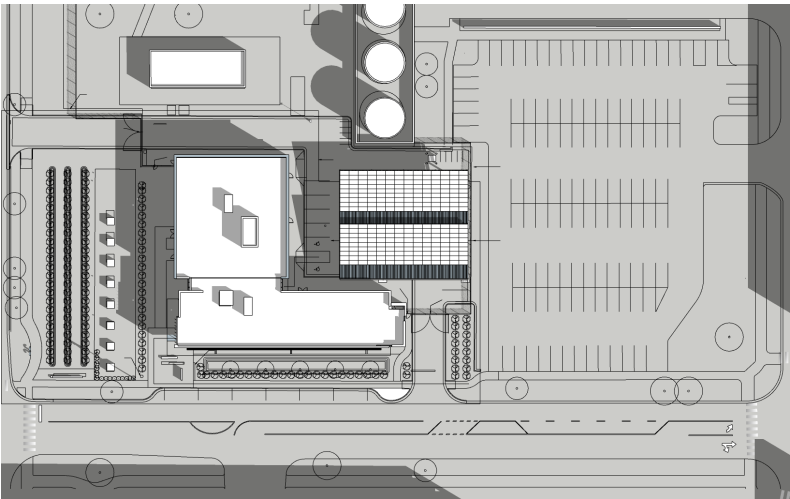
**CANOPY MOUNTED PHOTOVOLTAIC PANELS**  
**136 kW CANOPY**

# Site Section

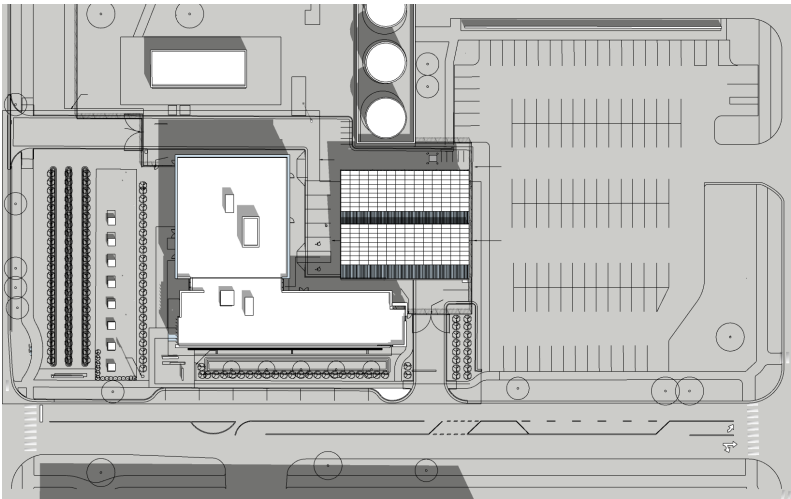




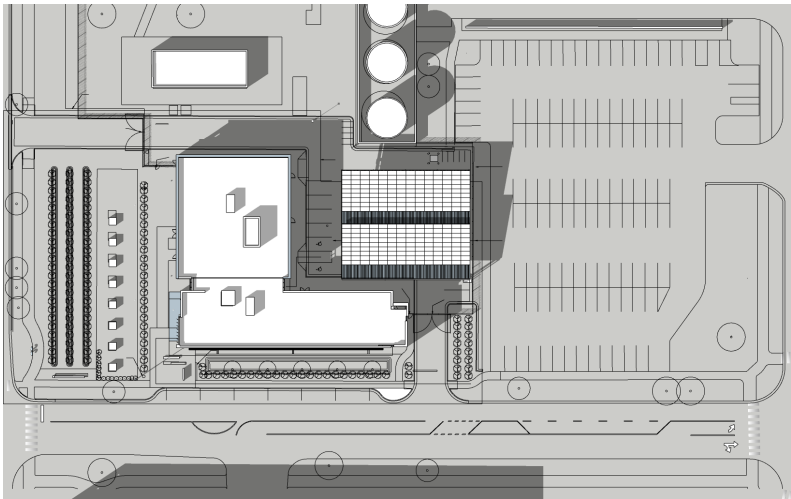
# Shadow Studies



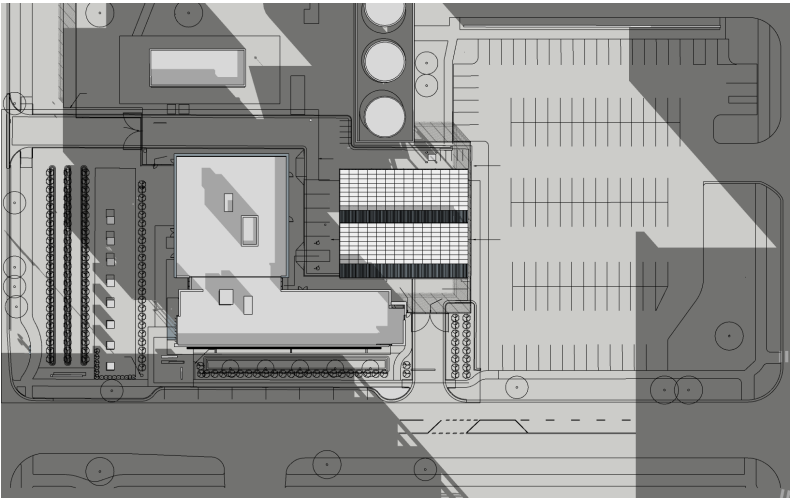
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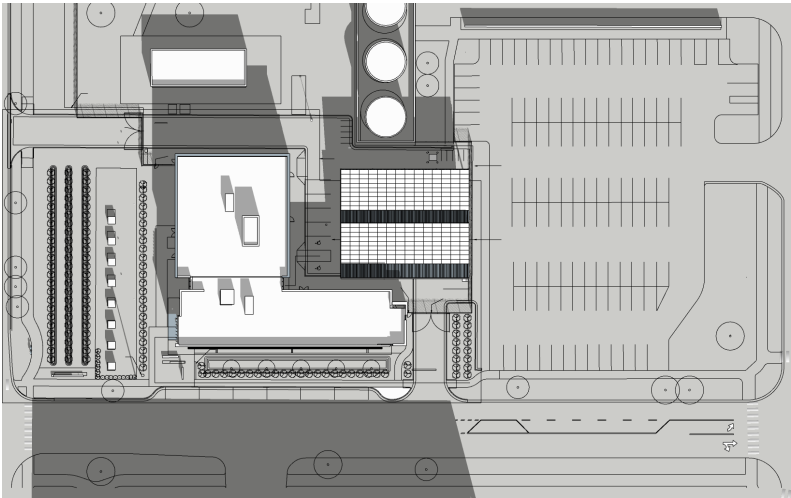
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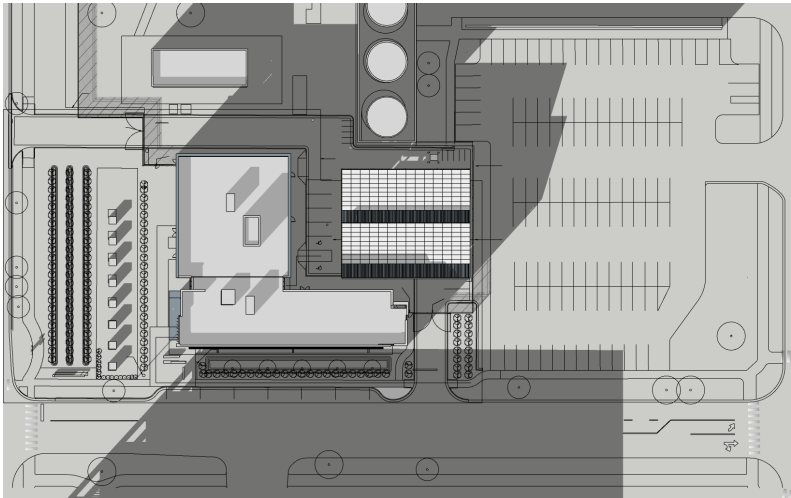
MARCH, 21 3:00 PM



DECEMBER, 21 9:00 AM



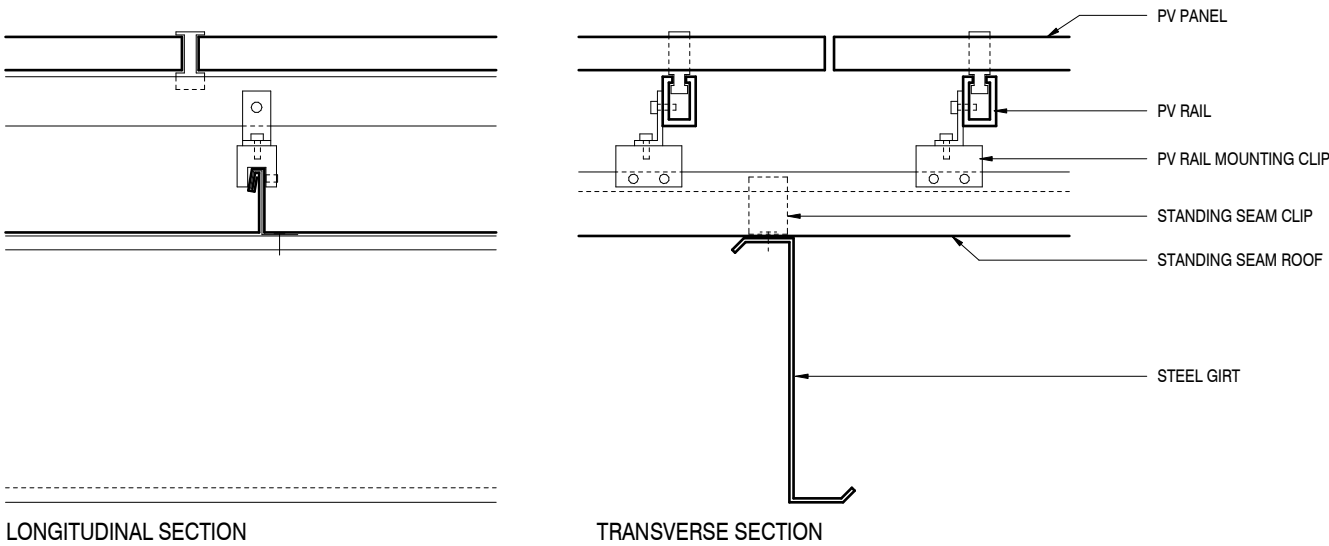
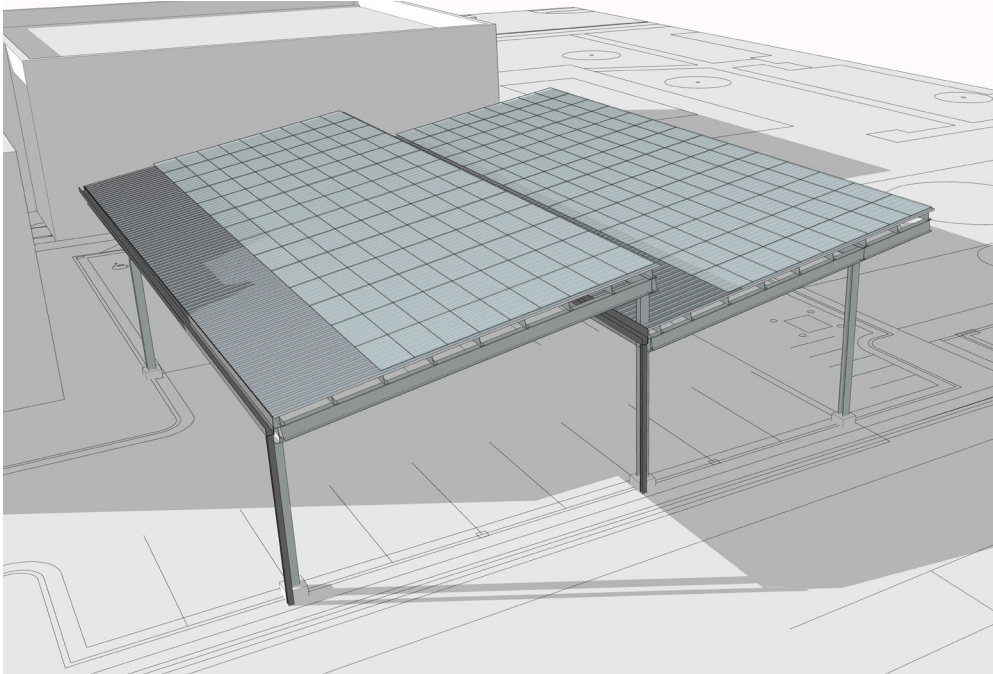
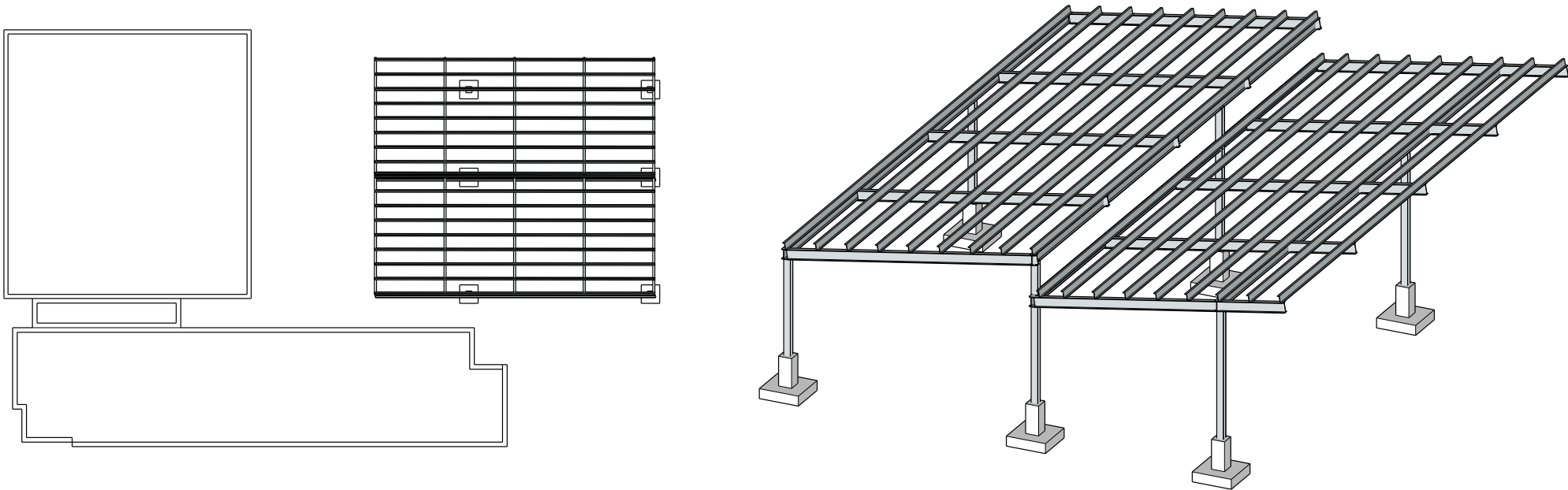
DECEMBER, 21 11:00 AM



DECEMBER, 21 3:00 PM

# Structural Concept

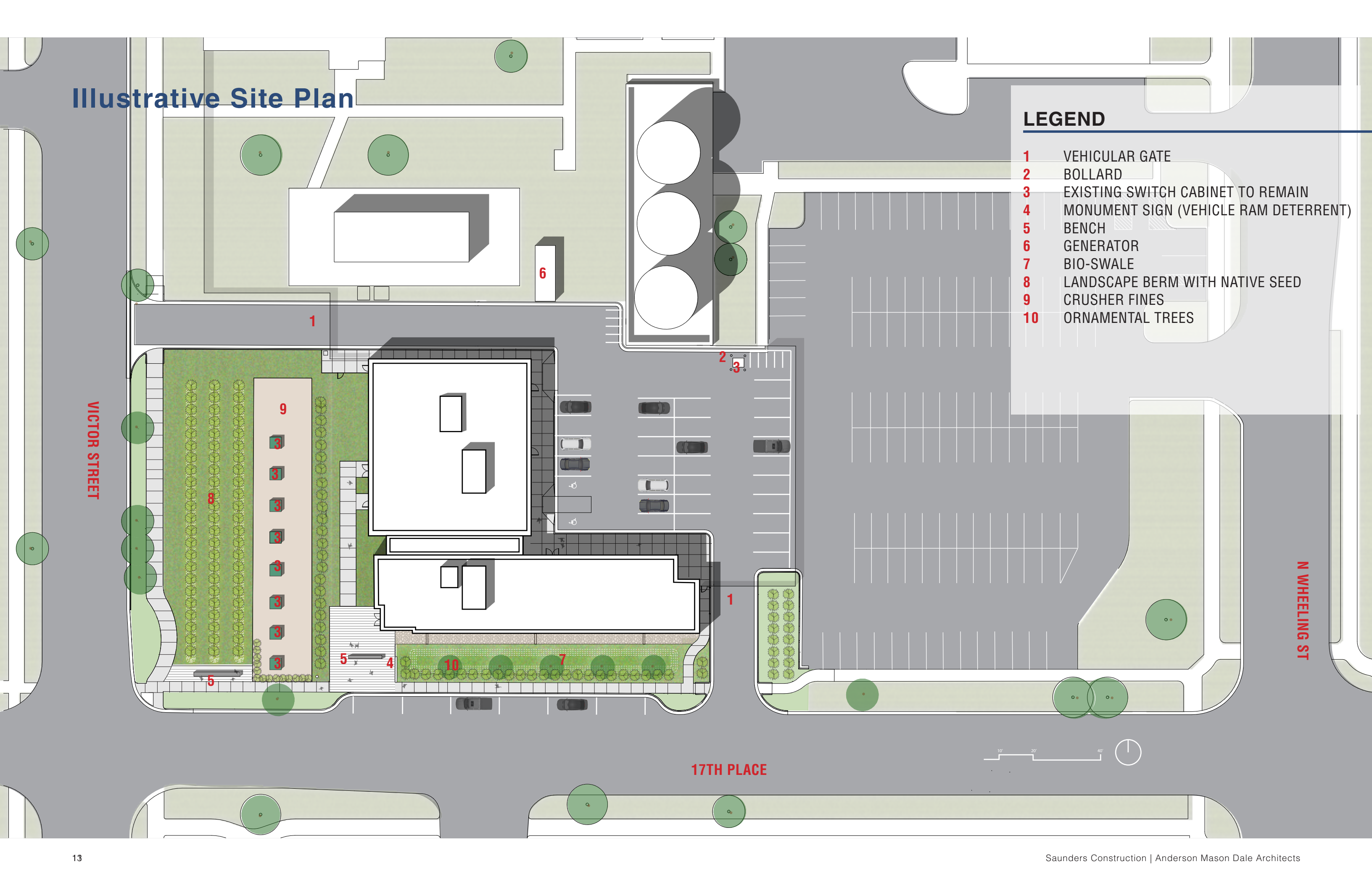
STRUCTURAL EFFICIENCY IS A KEY DRIVER IN DESIGN. THE COLUMN LAYOUT IS DRIVEN BY VEHICLE CIRCULATION. THE BEAM AND GIRT SYSTEM MAXIMIZES SPAN EFFICIENCIES AND THE DOUBLE ACTION OF THE CANTILEVERS TO MINIMIZE WEIGHT. WIDE FLANGE SECTIONS ARE USED TO SIMPLIFY CONNECTION DETAILS.



# Illustrative Site Plan

## LEGEND

- 1 VEHICULAR GATE
- 2 BOLLARD
- 3 EXISTING SWITCH CABINET TO REMAIN
- 4 MONUMENT SIGN (VEHICLE RAM DETERRENT)
- 5 BENCH
- 6 GENERATOR
- 7 BIO-SWALE
- 8 LANDSCAPE BERM WITH NATIVE SEED
- 9 CRUSHER FINES
- 10 ORNAMENTAL TREES

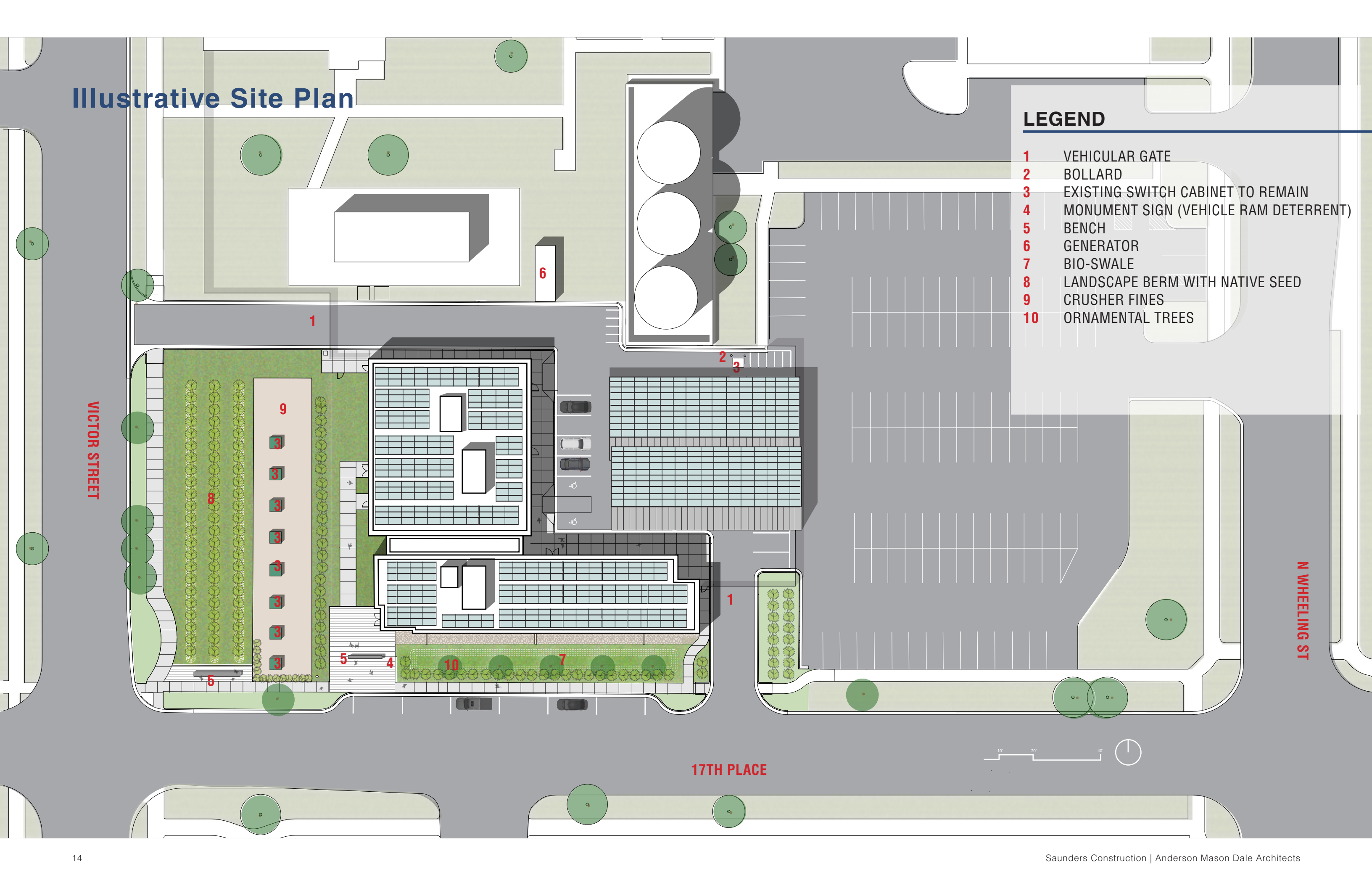




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# Exterior Materials

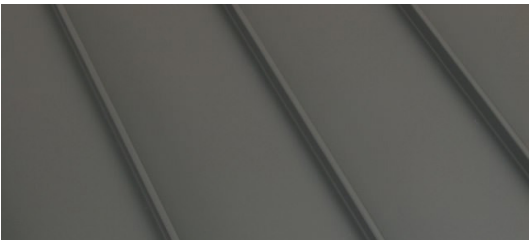
PHOTOVOLTAIC PANELS



GALVANIZED STEEL



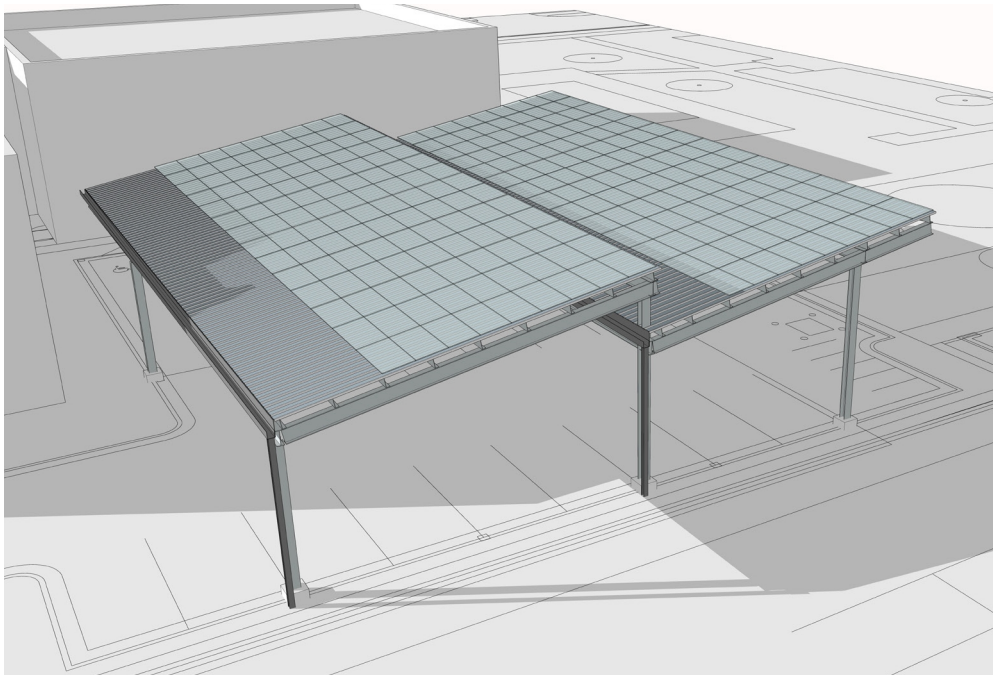
STANDING SEAM METAL ROOF





# Exterior Materials

## PRECEDENTS



Galvanized Steel Canopy - Whole Foods Bel Mar



Galvanized Steel Canopy - Whole Foods Bel Mar



Galvanized Steel Canopy - NREL Golden



Exterior Vignettes



SOUTHEAST





SOUTHEAST





EAST





NORTH





SOUTHWEST





# LIGHT FIXTURE SELECTIONS

Currently evaluating two options:

eLuminaire ATLAS G Series



Lithonia VCPG LED



**VCPG LED**  
Parking Garage



**Specifications**

Diameter: 19"

Height: 3.75"  
(4.85" with Up-Light)

Weight  
(max, with  
no options): 18 lbs

