

Bay Area School Office Addition

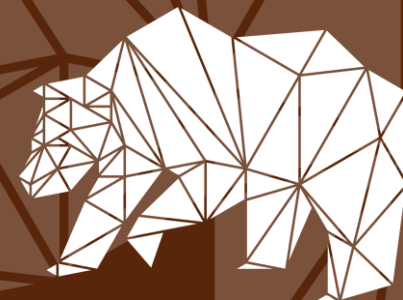
Building Type & Use: Office addition

Location: South San Francisco, CA

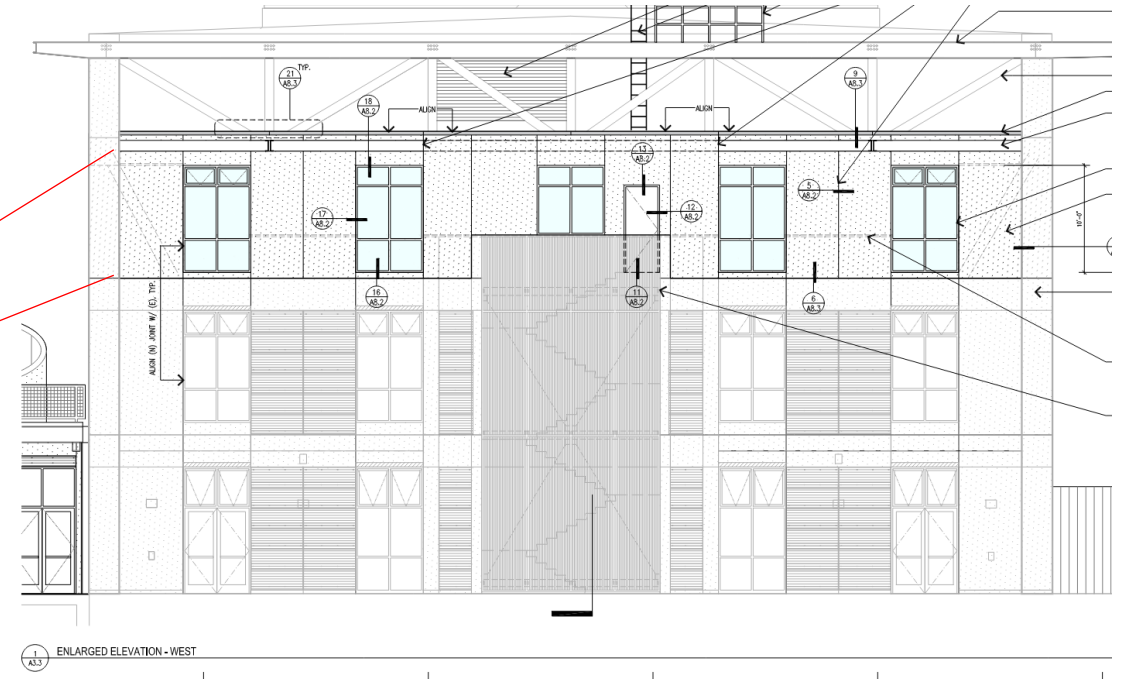
Occupancy/Client: School administration & staff

Highlights: Title 24 compliance, office addition/expansion, energy modeling, building envelope

This case study is part of a series illustrating how building energy modeling is applied on real projects — showing the tools, decisions, and outcomes that define high-performance design in practice. CalBEM, a collaborative initiative sponsored by Southern California Edison, brings together California's building energy modeling (BEM) community to advance solutions for high-performance buildings.



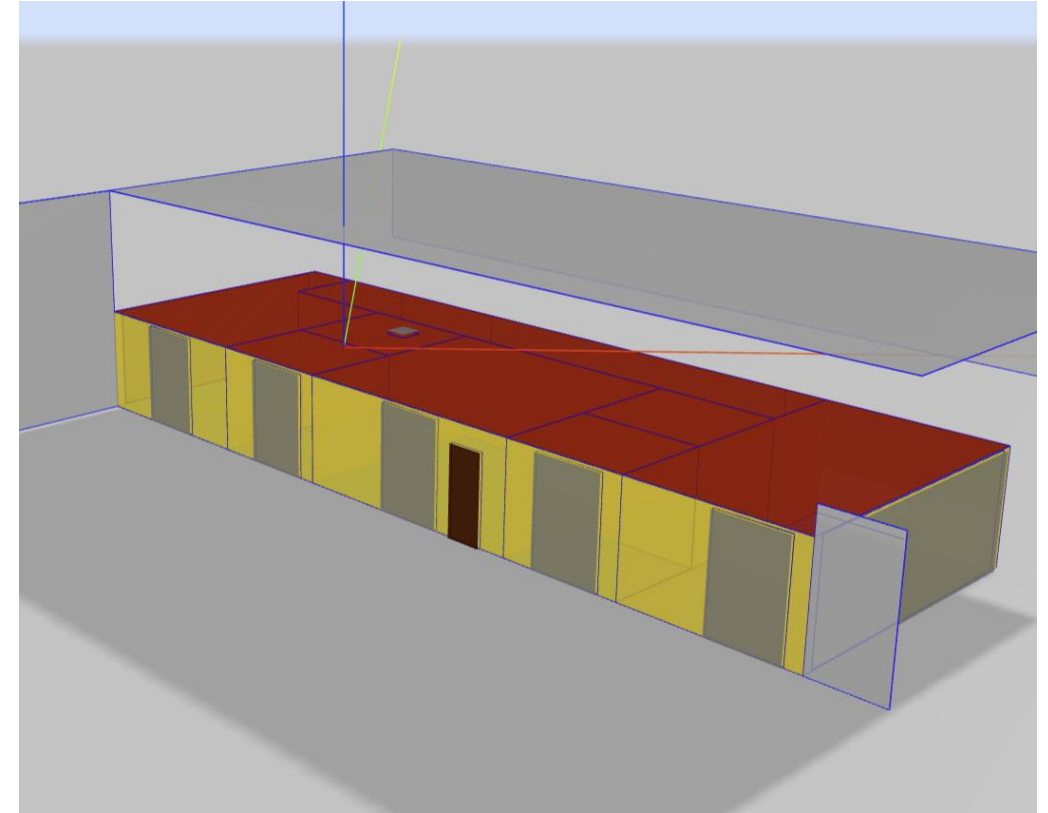
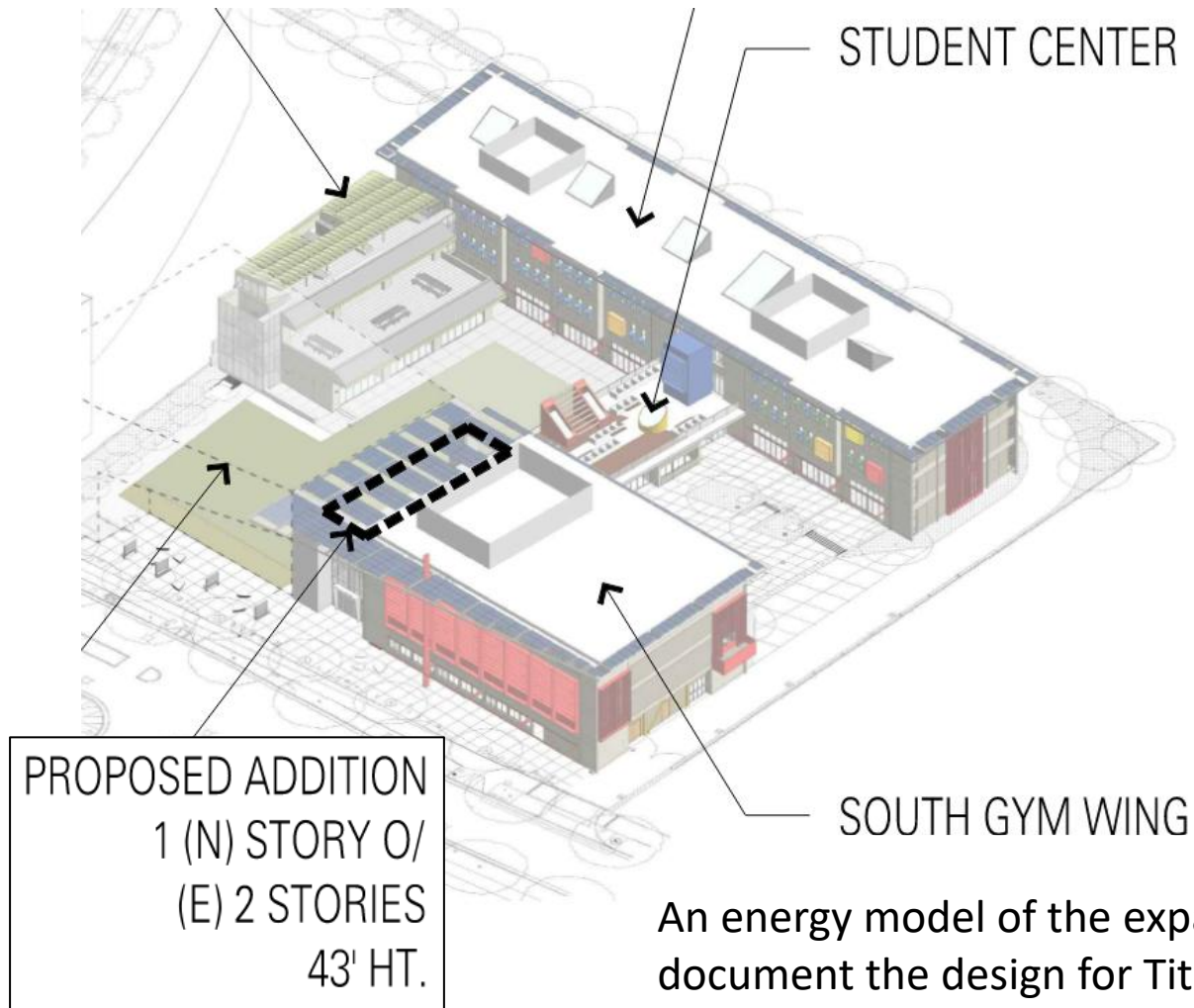
Existing School, Title 24 Office Addition



The school in South San Francisco needed to expand the facility and found a portion of the campus where additional offices could be built out within the existing superstructure.



Additional 3rd Level over 2 Stories of Existing



An energy model of the expansion was built to estimate energy use and document the design for Title 24 energy code compliance for the envelope and lighting compliance.

Title 24 Compliance



CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD						NRCC-PRF-E
Nonresidential Performance Compliance Method						(Page 1 of 15)
Project Name:		Nueva HS Office Addition		Date Prepared:		2023-07-26
A. General Information						
1	Project Name	Nueva HS Office Addition				
2	Run Title	Compliance Documents				
3	Project Location	131 E 28th Ave				
4	City	San Mateo	5	Standards Version	Compliance 2022	
6	Zip code	94403	7	Compliance Software (version)	CBECC 2022.2.1 (1288)	
8	Climate Zone	3	9	Building Orientation (deg)	0	
10	Building Type(s)	• Nonresidential	11	Weather File	SAN-FRANCISCO-INTL_STYP20.epw	
12	Project Scope	• New envelope and lighting	13	Number of Dwelling Units	0	
14	Total Conditioned Floor Area in Scope (ft²)	2173.5	15	Total # of hotel/motel rooms	0	
16	Total Unconditioned Floor Area (ft²)	0	17	Fuel Type	Natural gas	
18	Nonresidential Conditioned Floor Area	2173.5	19	Total # of Stories (Habitable Above Grade)	1	
20	Residential Conditioned Floor Area	0				

CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD				NRCC-PRF-E
Nonresidential Performance Compliance Method				(Page 10 of 15)
F1B. PV BATTERY BUILDING TYPE(S)				
	01	02	03	
	Building Occupancy Type* (From Table 140.10-A/B and 170.2-U/V)	Conditioned Floor Area (ft²)	Unconditioned Floor Area (ft²)	
	Grocery	0	0	
	High-Rise Multifamily	0	0	
	Office, Financial Institutions, Unleased Tenant Space	1729.01	0	
	Retail	0	0	
	School	0	0	
	Warehouse	0	0	
	Auditorium, Convention Center, Hotel/Motel, Library, Medical Office Building/Clinic, Restaurant, Theater	444.486	0	
	None	0	0	
*Building Occupancy Types are defined in Section 100.1 of the Energy Code				
G1. ENVELOPE GENERAL INFORMATION (conditioned spaces only)				
	01	02	03	04
	Opaque Surfaces & Orientation	Total Gross Surface Area (ft²)	Total Fenestration Area (ft²)	Window to Wall Ratio (%)
	North-Facing ¹	2257.08	245.83	10.89
	East-Facing ²	967.92	0	0
	South-Facing ³	965	369.89	38.33
	West-Facing ⁴	1459.17	186.08	12.75
	Total	5649.16	801.81	14.19
	Roof	2173.5	4.97	0.23
Notes ¹ North-Facing is oriented to within 45 degrees of true north, including 45 00'00" east of north (NE), but excluding 45 00'00" west of north (NW), ² East-Facing is oriented to within 45 degrees of true east, including 45 00'00" south of east (SE), but excluding 45 00'00" north of east (NE), ³ South-Facing is oriented to within 45 degrees of true south, including 45 00'00" west of south (SW), but excluding 45 00'00" east of south (SE), ⁴ West-Facing is oriented to within 45 degrees of true west, including 45 00'00" north of west (NW), but excluding 45 00'00" south of west (SW).				