Campus: UC San Francisco
Building Name: 777 Mariposa Street
CAAN ID: 3074
Auxiliary Building ID: n/a

UNIVERSITY OF CALIFORNIA

Date: 6 June 2023

CERTIFICATE OF SEISMIC PERFORMANCE RATING

☐ **UC-Designed & Constructed Facility**

☒ **Campus-Acquired or Leased Facility**

BUILDING DATA

Building Name: 777 Mariposa Street
Address: 777 Mariposa Street, San Francisco, CA 94143
Site location coordinates: Latitude 37.763826 Longitudinal -122.391244

UCOP SEISMIC PERFORMANCE RATING (OR "RATING"): IV

ASCE 41-17 Model Building Type:

a. Longitudinal Direction: PC1 Precast or Tilt-up concrete shear walls with flexible diaphragms
b. Transverse Direction: PC1 Precast or Tilt-up concrete shear walls with flexible diaphragms

Gross Square Footage: 44,124 sq. ft.
Number of stories *above* grade: 1 (plus two separate mechanical platforms with independent IMRF seismic-force-resisting systems, raised 12.67' above grade.)
Number of basement stories *below* grade: 1 (partial lower story)

Year Original Building was Constructed: 1969
Original Building Design Code & Year: 1967 UBC (inferred based on the date of design)
Retrofit Building Design Code & Code (if applicable): 2018 Californa Existing Building Code

SITE INFORMATION

Site Class: C Basis: "Geotechnical Investigation Report Structural Retrofit of 777 Mariposa" by Kleinfelder dated 21 May 2021, page 16/42.
Geologic Hazards:
Fault Rupture: No Basis: Geotechnical Investigation Report by Kleinfelder dated 21 May 2021
Liquefaction: No Basis: Geotechnical Investigation Report by Kleinfelder dated 21 May 2021
Landslide: No Basis: Inferred from level site

ATTACHMENT

Retrofit Structural Drawings: Structural drawings entitled "777 Mariposa Development" by DCI Engineers dated 21 December 2021, General Notes sheet S1.11

CERTIFICATION & PRESUMPTIVE RATING VERIFICATION STATEMENT

I, Joe Maffei, a California-licensed structural engineer, am responsible for the completion of this certificate, and I have no ownership interest in the property identified above. My scope of review to support the completion of this certificate included both of the following ("No" responses must include an explanation):

a) the review of structural drawings indicating that they are as-built or record drawings, or that they otherwise are the basis for the construction of the building: ☑ Yes ☐ No
b) visiting the building to verify the observable existing conditions are reasonably consistent with those shown on the structural drawings: ☑ Yes ☐ No

Based on my review, I have verified that the UCOP Seismic Performance Rating is presumptively permitted by the following UC Seismic Program provision (choose one of the following):

☐ 1) Contract documents indicate that the original design and construction of the aforementioned building is in accordance with the benchmark design code year (or later) building code seismic design provisions for UBC or IBC listed in the Benchmark Building Codes and Standards table below.

☐ 2) The existing rating is based on an acceptable basis of seismic evaluation completed in 2006 or later.

☑ 3) Contract documents indicate that a comprehensive[1] building seismic retrofit design was fully-constructed with an engineered design based on the 1997 UBC/1998 ***or later*** CBC, and (choose one of the following):

☒ the retrofit project was completed by the UC campus. Further, the design was based on ground motion parameters, at a minimum, corresponding to BSE-1E (or BSE-R) and BSE-2E (or BSE-C) as defined in ASCE 41, or the full design basis ground motion required in the 1997 UBC/1998 CBC ***or later*** for EXISTING buildings, and is presumptively assigned a rating of IV.

☐ the retrofit project was completed by the UC campus. Further, the design was based on ground motion parameters, at a minimum, corresponding to BSE-1 (or BSE-1N) and BSE-2 (or BSE-2N) as defined in ASCE 41, or the full design basis ground motion required in the 1997 UBC/1998 ***or later*** CBC for NEW buildings, and is presumptively assigned a rating of III.

☐ the retrofit project was not completed by the UC campus following UC policies, and is presumptively assigned a rating of IV.

Note: Maffei Structural Engineering (MSE)peer reviewed the seismic retrofit drawings by DCI Engineers, entitled "777 Mariposa Development" dated 21 December 2021, and conducted two site visits during construction in 2022. The seismic retrofit includes strengthening the plywood roof diaphragm and the wall-to-roof out-of-plane connections: MSE finds that it is a Comprehensive Retrofit.

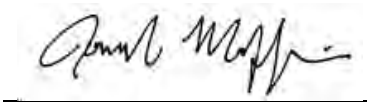
The renovation also included a new concrete slab-on-grade main floor, reinforcement of the roof purlins to support suspended mechanical loads, and two new steel mezzanine platforms with moment-resisting frames that are independent of the existing building, designed for new building provisions of the 2018 CBC. The retrofit was designed in conformance with the 2018 CEBC, with objective of Collapse Prevention performance at the BSE-C hazard level (ground motions with a 5% in 50-year probability of exceedance),

[1] A comprehensive retrofit addresses the entire building structural system as indicated by the associated seismic evaluation, as opposed to addressing selective portions of the structural system.

and Life Safety performance at the BSE-R earthquake level (ground motions with a 20% in 50-year probability of exceedance).

CERTIFICATION SIGNATURE

AFFIX SEAL HERE

Joe Maffei	Principal
Print Name	Title
S3694	6 June 2023
CA Professional Registration No.	
	6 June 2023
Signature	Date

Maffei Structural Engineering
98 Battery Street, Suite 300
San Francisco, CA 94111
415-329-6100

Firm Name, Phone Number, and Address

Benchmark Building Codes and Standards

Building Type [a, b, j]	Building Seismic Design Provisions	
	UBC	IBC
Wood frame, wood shear panels (Types W1 and W2)	1976	2000
Wood frame, wood shear panels (Type W1a) [j]	1976 [j]	2000
Steel moment-resisting frame (Types S1 and S1a) [j]	1997 [j]	2000
Steel concentrically braced frame (Types S2 and S2a)	1997	2000
Steel eccentrically braced frame (Types S2 and S2a)	1988 [g]	2000
Buckling-restrained braced frame (Types S2 and S2a)	[f]	2006
Metal building frames (Type S3)	[f]	2000
Steel frame with concrete shear walls (Type S4)	1994	2000
Steel frame with URM infill (Types S5 and S5a)	[f]	2000
Steel plate shear wall (Type S6)	[f]	2006
Cold-formed steel light-frame construction—shear wall system (Type CFS1)	1997 [h]	2000
Cold-formed steel light-frame construction—strap-braced wall system (Type CFS2)	[f]	2003
Reinforced concrete moment-resisting frame (Type C1) [i]	1994	2000
Reinforced concrete shear walls (Types C2 and C2a)	1994	2000
Concrete frame with URM infill (Types C3 and C3a) [j]	[f]	[f, j]
Tilt-up concrete (Types PC1 and PC1a)	1997	2000
Precast concrete frame (Types PC2 and PC2a)	[f]	2000
Reinforced masonry (Type RM1)	1997	2000
Reinforced masonry (Type RM2)	1994	2000
Unreinforced masonry (Type URM) [j]	[f]	[f, j]
Unreinforced masonry (Type URMa) [j]	[f]	[f, j]
Seismic isolation or passive dissipation	1991	2000

Note: This table has been adapted from ASCE 41-17 Table 3-2. Benchmark Building Codes and Standards for Life Safety Structural Performed at BSE-1E.

Note: UBC = Uniform Building Code

Note: IBC = International Building Code

a Building type refers to one of the common building types defined in Table 3-1 of ASCE 41-17.

b Buildings on hillside sites shall not be considered Benchmark Buildings.

c not used

d not used

e not used

f No benchmark year; buildings shall be evaluated in accordance with the UC Seismic Safety Policy and the UC Seismic Program Guidelines.

g Steel eccentrically braced frames with links adjacent to columns shall comply with the 1994 UBC Emergency Provisions, published September/October 1994, or subsequent requirements.

h Cold-formed steel shear walls with wood structural panels only.

i Flat slab concrete moment frames shall not be considered Benchmark Buildings.

j Shaded cells are intentionally modified from ASCE 41-17 Table 3-2.

[INSERT TITLE SHEET FROM RETROFIT DRAWINGS]

STRUCTURAL - GENERAL NOTES

GENERAL REQUIREMENTS

GOVERNING CODE: The design and construction of this project is governed by the "**California Existing Building Code (CEBC)", 2018 Edition**, here after referred to as the CEBC, as adopted and modified by the University of California, understood to be the Authority Having Jurisdiction (AHJ).

REFERENCE STANDARDS: Refer to Chapter 35 of 2018 CBC. Where other Standards are noted in the drawings, use the latest edition of the standard unless a specific date is indicated. Reference to a specific section in a code does not relieve the contractor from compliance with the entire standard.

DEFINITIONS: The following definitions cover the meanings of certain terms used in these notes:

"**Architect/Engineer**" – The Architect of Record and the Structural Engineer of Record.

- "**Structural Engineer of Record**" **(SER)** – The structural engineer who is licensed to stamp & sign the structural documents for the project. The SER is responsible for the design of the Primary Structural System.
- "**Submit for review**" - Submit to the Architect/SER for review prior to fabrication or construction.
- "**Per Plan**" – Indicates references to the structural plans, elevations and structural general notes.
- "**Seismic Force Resisting System (SFRS)**" **–** A recognized structural system of components (beams, braces, drags, struts, collectors, diaphragms, columns, walls, etc) of the primary structure that are specially designed and proportioned to resist earthquake-induced ground motions and maintain stability of the structure. Fabrication and installation of components designated as part of the SFRS require the general contractor, subcontractor, or supplier who is responsible for any portion of SFRS fabrication or installation to comply with special requirements (including, but not limited to, material control, compliance certifications, personnel qualifications, documentation, reporting requirements, etc) and to provide the required Quality Control including the required coordination of Special Inspections (Quality Assurance – QA). Special provisions apply to any member designated as part of the SFRS. Refer to plans, elevations, details, Design Criteria and Symbols and Legends for applicable members and connections.
- **"Specialty Structural Engineer" (SSE) –** A professional engineer (PE or SE), licensed in the State where the project is located, (typically not the SER), who performs specialty structural engineering services for selected specialty-engineered elements identified in the Contract Documents, and who has experience and training in the Specialty. Documents stamped and signed by the SSE shall be completed by or under the direct supervision of the SSE.
- **"Bidder-designed" –** Components of the structure that require the general contractor, subcontractor, or supplier who is responsible for the design, fabrication and installation of specialty-engineered elements identified in the Contract Documents to retain the services of an SSE. Submittals of "Bidder-designed" elements shall be stamped and signed by the SSE.

SPECIFICATIONS: Refer to the project specifications issued as part of the contract documents for information supplemental to these drawings.

OTHER DRAWINGS: Refer to the architectural, mechanical, electrical, civil and plumbing drawings for additional information including but not limited to: dimensions, elevations, slopes, door and window openings, non-bearing walls, stairs, finishes, drains, waterproofing, railings, elevators, mechanical unit locations, and other nonstructural items.

STRUCTURAL DETAILS: The structural drawings are intended to show the general character and extent of the project and are not intended to show all details of the work. Use entire detail sheets and specific details referenced in the plans as "typical" wherever they apply. Similarly, use details on entire sheets with "typical" in the name wherever they apply.

STRUCTURAL RESPONSIBILITIES: The structural engineer (SER) is responsible for the strength and stability of the primary structure in its completed form.

COORDINATION: The Contractor is responsible for coordinating details and accuracy of the work; for confirming and correlating all quantities and dimensions; for selecting fabrication processes; for techniques of assembly; and for performing work in a safe and secure manner.

EXISTING CONDITIONS: Information shown on the drawings related to existing conditions represent the present knowledge, but without guarantee of accuracy. Report conditions that conflict with contract documents to the architect or SEOR. Do not deviate from the contract documents without written direction from the architect and/or SEOR. All existing dimensions and information shall be field verified prior to fabrication as required to coordinate with new construction.

MEANS, METHODS and SAFETY REQUIREMENTS: The contractor is responsible for the means and methods of construction and all job related safety standards such as OSHA and DOSH (Department of Occupational Safety and Health). The contractor is responsible for means and methods of construction related to the intermediate structural conditions (i.e. movement of the structure due to moisture and thermal effects; construction sequence; temporary bracing, etc).

BRACING/SHORING DESIGN ENGINEER: The contractor shall at their discretion employ an SSE, a registered professional engineer for the design of any temporary bracing and shoring.

TEMPORARY SHORING, BRACING: The contractor is responsible for the strength and stability of the structure during construction and shall provide temporary shoring, bracing and other elements required to maintain stability until the structure is complete. It is the contractor's responsibility to be familiar with the work required in the construction documents and the requirements for executing it properly.

CONSTRUCTION LOADS: Loads on the structure during construction shall not exceed the design loads as noted in DESIGN CRITERIA & LOADS below or the capacity of partially completed construction as determined by the Contractor's SSE for Bracing/Shoring.

CHANGES IN LOADING: The contractor has the responsibility to notify the SER of any architectural, mechanical, electrical, or plumbing load imposed onto the structure that differs from, or that is not documented on the original Contract Documents (architectural / structural / mechanical / electrical or plumbing drawings). Provide documentation of location, load, size and anchorage of all undocumented loads in excess of **400** pounds. Provide marked-up structural plan indicating locations of any new equipment or loads. Submit plans to the Architect/Engineer for review prior to installation.

NOTE PRIORITIES: Plan and detail notes and specific loading data provided on individual plans and detail drawings supplements information in the Structural General Notes.

DISCREPANCIES: In case of discrepancies between the General Notes, Specifications, Plans/Details or Reference Standards, the Architect/Engineer shall determine which shall govern. Discrepancies shall be brought to the attention of the Architect/Engineer before proceeding with the work. Should any discrepancy be found in the Contract Documents, the Contractor will be deemed to have included in the price the most expensive way of completing the work, unless prior to the submission of the price, the Contractor asks for a decision from the Architect as to which shall govern. Accordingly, any conflict in or between the Contract Documents shall not be a basis for adjustment in the Contract Price.

SITE VERIFICATION: The contractor shall verify all dimensions and conditions at the site. Conflicts between the drawings and actual site conditions shall be brought to the attention of the Architect/Engineer before proceeding with the work.

ADJACENT UTILITIES: The contractor shall determine the location of all adjacent underground utilities prior to earthwork, foundations, shoring, and excavation. Any utility information shown on the drawings and details is approximate and not necessarily complete.

ALTERNATES: Alternate products of similar strength, nature and form for specified items may be submitted with adequate technical documentation (proper test report, etc.) to the Architect/Engineer for review. Alternate materials that are submitted without adequate technical documentation or that significantly deviate from the design intent of materials specified may be returned without review. Alternates that require substantial effort to review will not be reviewed unless authorized by the Owner.

DESIGN CRITERIA AND LOADS

OCCUPANCY:	Risk Category of Building per 2018 CBC Table 1604.5 =	**II**

WIND DESIGN:	**MAIN WIND FORCE RESISTING SYSTEM**	
	Ultimate Design Wind Speed, V_{ULT} (MPH)	**91**
	Exposure Category	**B**
	Topographic Factor **Kzt =**	**1.0**
	Wind Analysis procedure used:	**Directional**

SEISMIC DESIGN: (Mezzanines)	**Seismic Design Category: SDC =**	**D**
	Basic Structural System	**Building Frame**
	Seismic Force Resisting System	**Intermediate Moment Frame**
	Response Modification Factor: **R =**	**4.6**
	System Over Strength Factor **Omega =**	**3**
	Deflection Amplification Factor **Cd =**	**4**
	Site Classification per CBC 1613.3.2 & ASCE 7-16, Ch. 20 **Site Class =**	**D**
	Seismic Importance Factor per ASCE 7-16 Table 1.5-2 **Ie =**	**1.0**
	Spectral Response Acceleration (Short Period) **S_s =**	**1.500 g**
	Spectral Response Acceleration (1-Second Period) **S_1 =**	**0.600 g**
	Spectral Design Response Coefficient (Short Period) **S_{DS} =**	**1.200 g**
	Spectral Design Response Coefficient (1-Second Period) **S_{D1} =**	**0.560 g**
	Seismic response coefficient(s) **Cs =**	**0.30**
	Redundancy Factor (North/South Direction) **N/S rho=**	**1.3**
	Redundancy Factor (East / West Direction) **E/W rho=**	**1.3**
	Seismic Analysis procedure used:	**Equivalent Lateral Force (ELF)**

SEISMIC DESIGN: (Existing Bldg)	**Seismic Design Category: SDC =**	**D**
	Basic Structural System	**Bearing Wall**
	Seismic Force Resisting System	**Concrete Shear Walls**
	Site Classification per ASCE 41-13, Ch. 2.4 **Site Class =**	**C**
	Basic Safety Earthquakes (BSE):	
	Spectral Acceleration:	
	BSE-R, Life Safety	
	Spectral Response Acceleration (Short Period) **S_{XS} =**	**0.892**
	Spectral Response Acceleration (1-Second Period) **S_{X1} =**	**0.399**
	BSE-C Collapse Prevention	
	Spectral Response Acceleration (Short Period) **S_{XS} =**	**1.659**
	Spectral Response Acceleration (1-Second Period) **S_{X1} =**	**0.783**
	Design Base Shear (BSE-R) (KIPS)	**497**
	Design Base Shear (BSE-C) (KIPS)	**961**
	Seismic Analysis procedure used:	Linear Dynamic Procedure

SNOW LOAD:	Flat Roof Snow Load, (PSF) **p_f =**	**0**
	Snow Drift Loading required by Authority Having Jurisdiction?	**No**
	Snow Load Importance Factor **I_s =**	**1.0** (1)
	Ground Snow Load, (PSF) **p_g =**	**0**
	Snow Exposure Factor **C_e =**	**B**
	Thermal Factor **C_t =**	**1.0**
	See Roof Plan for Drift Loading	

1) Snow Load Importance Factor per ASCE 7-16 Table 1.5-2.

DESIGN LIVE LOADS	**AREA**	**LIVE LOADS (PSF) UNO**	**REMARKS & FOOTNOTES** (5)
	See structural loading plans for area loads and line loads. Loads listed below are for miscellaneous items.		
	Handrails & Pedestrian Guardrails	50 PLF or 200 LB	(1)
	Stairs & Exits	100 PSF or 300 LB	Stair treads per note (2)
	Lobbies	100	2000 lbs
	Corridors at First Floor	100	
	Corridors above first Floor	----	Same as occupancy served
	Offices	50 + 15	2000 lbs (4)
	Mechanical Rooms	150	
	Roofs	20 PSF or 300 LB	Area load is reducible. Point load per note (2). See above for Snow Load
	Catwalks (limited access)	40	300 lbs
	Loading Docks	250	8000 lb wheel load (3)

(1) Top rail shall be designed to resist 50 PLF line load or 200 lb point load applied in any direction at any point. Intermediate rails (all those except the handrail), balusters and panel fillers shall be designed to withstand a horizontally applied normal load of 50 LB on an area not to exceed 1 ft square. These three loads are to be considered separately with worst case used for design.
(2) Place 300 lb concentrated load over 2"x2" area at any point to produce maximum stress. Area load and concentrated load are to be considered separately with worst case used for design.
(3) Apply concentrated wheel load over 4-1/2"x4-1/2" square area.
(4) Floors for Business Group B (Offices) Occupancy shall be designed with a basic floor Live Load plus an additional 15 PSF (minimum) live loading for moveable partitions.
(5) Unless otherwise noted, point loads to be distributed over a 2.5ft x 2.5ft area and located to produce maximum load effects on structural members.

SUBMITTALS

SUBMIT FOR REVIEW: SUBMITTALS of shop drawings, and product data are required for items noted in the individual materials sections and for *bidder designed* elements.

SUBMITTAL REVIEW PERIOD: Submittals shall be made in time to provide a minimum of TWO WEEKS or 10 WORKING DAYS for review by the Architect/Engineer prior to the onset of fabrication.

GENERAL CONTRACTOR'S PRIOR REVIEW: Prior to submission to the Architect/Engineer, the Contractor shall review the submittal for completeness. Dimensions and quantities are not reviewed by the SER, and therefore, must be verified by the General Contractor. Contractor shall provide any necessary dimensional details requested by the Detailer and provide the Contractor's review stamp and signature before forwarding to the Architect/Engineer.

SHOP DRAWING REVIEW: Once the contractor has completed their review, the SER will review the submittal for general conformance with the design concept and the contract documents of the building and will stamp the submittal accordingly. Markings or comments shall not be construed as relieving the contractor from compliance with the project plans and specifications, nor departures there from. The SER will return submittals in the form they are submitted in (either hard copy or electronic). For hard copy submittals, the contractor is responsible for submitting the required number of copies to the SER for review.

SHOP DRAWING DEVIATIONS: When shop drawings (component design drawings) differ from or add to the requirements of the structural drawings they shall be designed and stamped by the responsible SSE.

DEFERRED SUBMITTALS

BIDDER-DESIGNED ELEMENTS
Submit "Bidder-Designed" deferred submittals to the Architect and SER for review. The deferred submittals shall also be submitted to the city for approval, if required by the city.

Design of prefabricated, "bidder designed", manufactured, pre-engineered, or other fabricated products shall comply with the following requirements:

1) Design considers tributary dead, live, wind and earthquake loads in combinations required by CBC.
2) Design within the Deflection Limits noted herein and as specified or referenced in the CBC.
3) Design shall conform to the specifications and reference standards of the governing code.
4) Submittal shall include:
   a. Calculations prepared, stamped and signed by the SSE demonstrating code conformance.
   b. Engineered component design drawings are prepared, stamped and signed by the SSE.
   c. Product data, technical information and manufacturer's written requirements and Agency approvals as applicable.
   d. SSE may submit to the Architect/Engineer, a request to utilize relevant alternate design criteria of similar nature and generally equivalency which is recognized by the Code and acceptable to the Authority Having Jurisdiction. Submit adequate documentation of design.

DEFLECTION	**VERTICAL**	**LIMIT**
LIMITS FOR SSE / BIDDER	Roof Members, Dead + Live or Snow or Wind, Total Load (TL) Deflection	L / 180, where (L is span length,inches)
DESIGNED	Roof, Live or Snow or Wind Load (RLL)	L / 240
ELEMENTS:	Floor Members, Total Load (TL) uno	L / 240
	Floor Live Load (LL) uno	L / 360

(1) Wind Load is reducible to 0.42 times the Component and Cladding Loads per Table 1604.3 footnote f.

GENERAL CONTRACTOR'S PRIOR REVIEW: Once the contractor has completed their review of the SSE component drawings, the SER will review the submittal for general conformance with the design of the building and will stamp the submittal accordingly. Review of the Specialty Structural Engineer's (SSE) shop drawings (component design drawings) is for compliance with design criteria and compatibility with the design of the primary structure and does not relieve the SSE of responsibility for that design. All necessary bracing, ties, anchorage, proprietary products shall be furnished and installed per manufacturer's instructions or the SSE's design drawings and calculations. These elements include but are not limited to:

- Steel Stairs
- Handrails, Guardrails and Balcony Rail Anchorages
- Metal Deck Edge Forms

DRAWING SCHEDULE
STRUCTURAL

DRAWING NUMBER	DRAWING TITLE	DATE ISSUE	ISSUE DESCRIPTION: BID/ISSUE	60% OWNER REVIEW ISSUE	STRUCTURAL SEISMIC PERMIT ISSUE	STRUCTURAL STEEL PERMIT ISSUE	90% OWNER REVIEW ISSUE	PERMIT RE-ISSUE	PERMIT RE-ISSUE 2	CONSTRUCTION ISSUE
		20-MAY-2021	X	X	X	X	X	X	X	X
S1.11	GENERAL NOTES	02-JUL-2021	X	X	X	X	X	X	X	X
S1.12	GENERAL NOTES	23-JUL-2021	X	X	X	X	X	X	X	X
S1.13	GENERAL NOTES	26-AUG-2021	X	X	X	X	X	X	X	X
S1.14	SPECIAL INSPECTIONS	08-OCT-2021	X	X	X	X	X	X	X	X
S3.10	BASEMENT FOUNDATION PLAN	11-NOV-2021	X	X	X	X	X	X	X	X
S3.11	FIRST FLOOR FOUNDATION AND FRAMING PLAN	21-DEC-2021	X	X	X	X	X	X	X	X
S3.20	MECHANICAL ACCESS PLATFORM FRAMING PLAN		X	X	X	X	X	X	X	X
S3.30	ROOF FRAMING PLAN		X	X	X	X	X	X	X	X
S3.31	ROOF NAILING PLAN		X	X	X		X	X	X	X
S3.40	ENLARGED STRUCTURAL PLANS				X		X	X	X	X
S4.11	TILT-UP PANEL ELEVATIONS		X	X	X		X	X	X	X
S5.11	MOMENT FRAME ELEVATIONS		X	X	X	X	X	X	X	X
S5.12	MOMENT FRAME DETAILS				X	X	X	X	X	X
S5.13	MOMENT FRAME DETAILS				X	X	X	X	X	X
S6.11	FOUNDATION DETAILS			X	X		X	X	X	X
S6.12	FOUNDATION DETAILS			X	X		X	X	X	X
S6.13	FOUNDATION DETAILS				X		X	X	X	X
S7.11	WOOD FRAMING DETAILS			X	X		X	X	X	X
S8.11	STEEL FRAMING DETAILS			X	X	X	X	X	X	X
S8.12	STEEL FRAMING DETAILS				X	X	X	X	X	X
S8.13	STEEL FRAMING DETAILS									X

DRAWING LEGEND

MARK	DESCRIPTION	MARK	DESCRIPTION
F2.0	FOOTING SYMBOL (REFER TO SPREAD FOOTING SCHEDULE)		INDICATES WIDE FLANGE COLUMN
1P	PILE CAP SYMBOL (REFER TO PILE CAP SCHEDULE)		INDICATES HOLLOW STRUCTURAL SECTION (HSS) COLUMN OR TUBE STEEL (TS) COLUMN
1	TILT-UP/PRECAST CONCRETE WALL CONNECTION SYMBOL (REFER TO CONNECTION DETAIL)		INDICATES HOLLOW STRUCTURAL SECTION (HSS) COLUMN OR STEEL PIPE COLUMN
2W4	SHEAR WALL SYMBOL (REFER TO SHEAR WALL SCHEDULE)		INDICATES WOOD POST
0 RFI 00	REVISION TRIANGLE		INDICATES BUNDLED STUDS
1	TILT-UP/PRECAST CONCRETE WALL PANEL NUMBER (REFER TO TILT-UP/ PRECAST CONCRETE WALL ELEVATIONS)		INDICATES CONCRETE COLUMN
1	CMU WALL REINFORCING SYMBOL (REFER TO CMU WALL REINFORCING SCHEDULE)		INDICATES PRECAST CONCRETE COLUMN
8"	CONTINUITY PLATE LENGTH (REFER TO TYPICAL DETAIL)		INDICATES MOMENT FRAME CONNECTION
DS	INDICATES DOUBLE SHEAR CONNECTION (REFER TO THE DOUBLE SHEAR PLATE CONNECTIONS DETAIL)		INDICATES CANTILEVER CONNECTION
00TB	INDICATES REINFORCING TYPE (REFER TO THE REINFORCING SCHEDULE)		INDICATES DRAG CONNECTION
SR_	INDICATES NUMBER OF STUD RAIL REQUIRED AT COLUMN (REFER TO STUD RAIL DETAILS)		INDICATES A LEDGER
1	ROOF/FLOOR DIAPHRAGM NAILING SYMBOL (REFER TO DIAPHRAGM NAILING SCHEDULE)		INDICATES WOOD OR STEEL STUD BEARING WALL LINE PER KEY ON SHEET
C1 XX'-XX"	STEEL/CONCRETE COLUMN SYMBOL (REFER TO STEEL COLUMN SCHEDULE)	OR	INDICATES WOOD OR STEEL STUD SHEAR WALL LINE AND HOLD-DOWNS PER KEY ON SHEET
T/FTG = X'-X"	ELEVATION SYMBOL (T/ REFERS TO COMPONENT THAT THE ELEVATION REFERENCES)		INDICATES MASONRY/CMU WALL
3	STUD BUBBLE (INDICATES NUMBER OF STUDS REQUIRED IF EXCEEDS NUMBER SPECIFIED IN PLAN NOTE)		INDICATES CONCRETE/TILT-UP CONCRETE WALL
	INDICATES STEP IN FOOTING (REFER TO TYPICAL STEP IN FOOTING DETAIL)		INDICATES BEARING WALL BELOW
X S.X.X	DETAILS OR SECTION CUT (DETAIL NUMBER/SHEET NUMBER)		INDICATES EXISTING WALL
00 S0.0	DETAILS OR SECTION CUT IN PLAN VIEW (DETAIL NUMBER/SHEET NUMBER)		POST-TENSION DEAD END (PLAN)
XX/SXX.XX	INDICATES LOCATION OF CONCRETE WALLS, SHEAR WALLS OR BRACED FRAME ELEVATIONS		POST-TENSION STRESSING END (PLAN)
	STRUCTURAL EXTENT SYMBOL SINGLE ARROW - END OF EXTENT DOUBLE ARROW - CONTINUOUS EXTENT ALONG THE ELEMENT LINE UNTIL THE ELEMENT IS INTERRUPTED		POST-TENSION PROFILE (PLAN) (IN INCHES)
			INTERMEDIATE STRESSING (PLAN)
	INDICATES DIRECTION OF DECK SPAN		

ABBREVIATIONS

L	Angle	EXT	Exterior	PJP	Partial Joint Penetration
AB	Anchor Bolt	FB	Factory-Built	PREFAB	Prefabricated
ADDL	Additional	FD	Floor Drain	PSF	Pounds per Square Foot
ADH	Adhesive	FDN	Foundation	PSI	Pounds Per Square Inch
ALT	Alternate	FIN	Finish	PSL	Parallel Strand Lumber
ARCH	Architectural	FLR	Floor	P-T	Post-Tensioned
B or BOT	Bottom	FRP	Fiberglass Reinforced Plastic	PT	Pressure Treated
B/	Bottom Of	FRT	Fire Retardant Treated	R	Radius
BLDG	Building	FTG	Footing	RD	Roof Drain
BLKG	Blocking	F/	Face of	REF	Refer/Reference
BMU	Brick Masonry Unit	GA	Gage	REINF	Reinforcing
BP	Baseplate	GALV	Galvanized	REQD	Required
BRBF	Buckling Restrained Braced Frame	GEOTECH	Geotechnical	RET	Retaining
BRG	Bearing	GL	Glue Laminated Timber	SB	Site-Built
BTWN	Between	GWB	Gypsum Wall Board	SCBF	Special Concentric Braced Frame
C	Camber	HDR	Header	SCHED	Schedule
CB	Castellated Beam	HF	Hem-Fir	SE	Structural Engineer of Record
C BORE	Counterbore	HGR	Hanger	SFRS	Seismic Force-Resisting System
CL or ℄	Centerline	HD	Hold-down	SHTHG	Sheathing
CLT	Cross-Laminated Timber	HORIZ	Horizontal	SIM	Similar
CIP	Cast in Place	HP	High Point	SLBB	Short Leg Back-to-Back
CJ	Construction or Control Joint	HSS + TS	(Hollow Structural Section)	SMF	Special Moment Frame
CJP	Complete Joint Penetration	IBC	International Building Code	SOG	Slab on Grade
CLR	Clear	ID	Inside Diameter	SP	Southern Pine
CLG	Ceiling	IE	Invert Elevation	SPEC	Specification
CMU	Concrete Masonry Unit	IF	Inside Face	SQ	Square
COL	Column	INT	Interior	SR	Studrail
CONC	Concrete	k	Kips	SF	Square Foot
CONN	Connection	KSF	Kips Per Square Foot	SST	Stainless Steel
CONST	Construction	LF	Lineal Foot	STAGG	Stagger/Staggered
CONT	Continuous	LL	Live Load	STD	Standard
C'SINK	Countersink	LLBB	Long Leg Back-to-Back	STIFF	Stiffener
CTRD	Centered	LLH	Long Leg Horizontal	STL	Steel
DIA	Diameter	LLV	Long Leg Vertical	STRUCT	Structural
DB	Drop Beam	LONGIT	Longitudinal	SWWJ	Solid Web Wood Joist
DBA	Deformed Bar Anchor	LSL	Laminated Strand Lumber	SYM	Symmetrical
DBL	Double	LVL	Laminated Veneer Lumber	T	Top
DEMO	Demolish	MAS	Masonry	T/	Top Of
DEV	Development	MAX	Maximum	T&B	Top & Bottom
DF	Douglas Fir	MECH	Mechanical	TC AX LD	Top Chord Axial Load
DIAG	Diagonal	MEZZ	Mezzanine	TCX	Top Chord Extension
DIST	Distributed	MFR	Manufacturer	TDS	Tie Down System
DL	Dead Load	MIN	Minimum	T&G	Tongue & Groove
DN	Down	MISC	Miscellaneous	THKND	Thickened
DO	Ditto	NIC	Not In Contract	THRD	Threaded
DP	Depth/Deep	NLT	Nail-Laminated Timber	THRU	Through
DWG	Drawing	NTS	Not To Scale	TRANSV	Transverse
(E)	Existing	OC	On Center	TYP	Typical
EA	Each	OCBF	Ordinary Concentric Braced Frame	UNO	Unless Noted Otherwise
EF	Each Face	OD	Outside Diameter	URM	Unreinforced Masonry
EL	Elevation	OF	Outside Face		
ELEC	Electrical	OPNG	Opening		
ELEV	Elevator	OPP	Opposite	VERT	Vertical
EMBED	Embedment	OWSJ	Open Web Steel Joist	W	Wide
EQ	Equal	OWWJ	Open Web Wood Joist	W/	With
EQUIP	Equipment	PL	Plate	W/O	Without
EW	Each Way	PAF	Powder Actuated Fastener	WHS	Welded Headed Stud
EXP	Expansion	PC	Precast	WP	Working Point
EXP JT	Expansion Joint	PERP	Perpendicular	WWF	Welded Wire Fabric
		PLWD	Plywood	±	Plus or Minus

ISSUED FOR CONSTRUCTION

UCSF
University of California San Francisco

ips
INTEGRATED PROJECT SERVICES
2200 POWELL ST, SUITE 470 EMERYVILLE, CA 94608
IPS - INTEGRATED PROJECT SERVICES, LLC.

DCFM APPROVAL:

BPS APPROVAL:

DCI engineers
707 W 2nd Avenue
Spokane, Washington 99201
P: (509) 455-4448 www.dci-engineers.com
CIVIL / STRUCTURAL

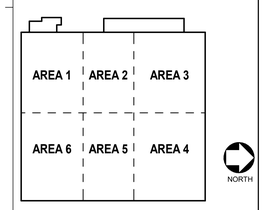
DCI PROJ NO: 20041-0489.01

SEAL:

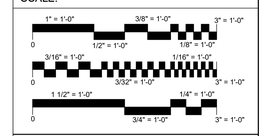
0	CONSTRUCTION ISSUE	21-DEC-2021
G	PERMIT RE-ISSUE 2	11-NOV-2021
F	PERMIT RE-ISSUE	08-OCT-2021
E	PERMIT ISSUE	26-AUG-2021
D	90% OWNER REVIEW ISSUE	26-AUG-2021
C	STRUCTURAL STEEL PERMIT ISSUE	06-AUG-2021
B	STRUCTURAL SEISMIC PERMIT ISSUE	23-JUL-2021
A	60% OWNER REVIEW ISSUE	02-JUL-2021

REVISION: DESCRIPTION: DATE:

KEY PLAN:



SCALE:



ThermoFisher SCIENTIFIC

777 MARIPOSA ST., SF
CAAN #: 3074
777 MARIPOSA ST, SF, CA 94143
777 MARIPOSA DEVELOPMENT

GENERAL NOTES

PROJECT NO:	SHEET NO:
CAD20615.01	**S1.11**
FILE NO: BIM 360	
DATE: 02-JUL-2021	

12/21/2021 12:45:18 PM

BIM 360://DX-C21027.00 TFS Wynd Coast Cell Therapy Construction/Struct-20041-0489 (01-R2021.rvt

Rating form completed by:
MAFFEI STRUCTURAL ENGINEERING
maffei-structure.com
Rob Ward, Joe Maffei, Noelle Yuen

Seismic retrofit update:

Aspects of the original 26 June 2020 Tier 1 report are superseded by the comprehensive seismic retrofit of the building, designed by DCI and peer reviewed by MSE, with construction completed in May 2023. Key revisions based on the retrofit design are shown in this report in orange font, and the date is updated. The Seismic Performance Level Rating is revised to IV.

Text in green is to be part of UCSF building database and may be part of UCOP database

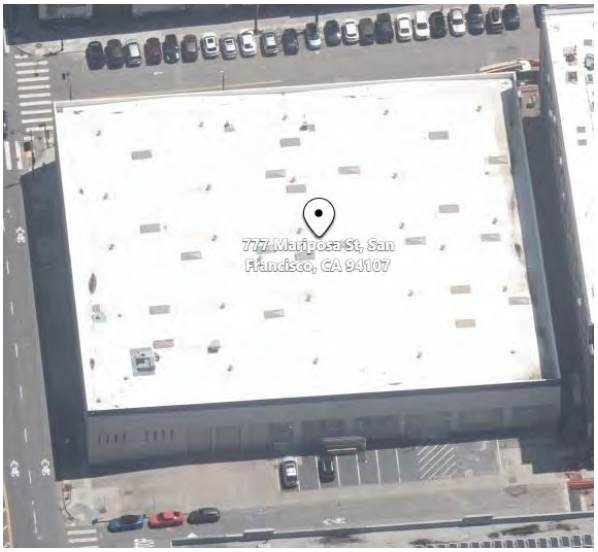
UCSF building seismic ratings

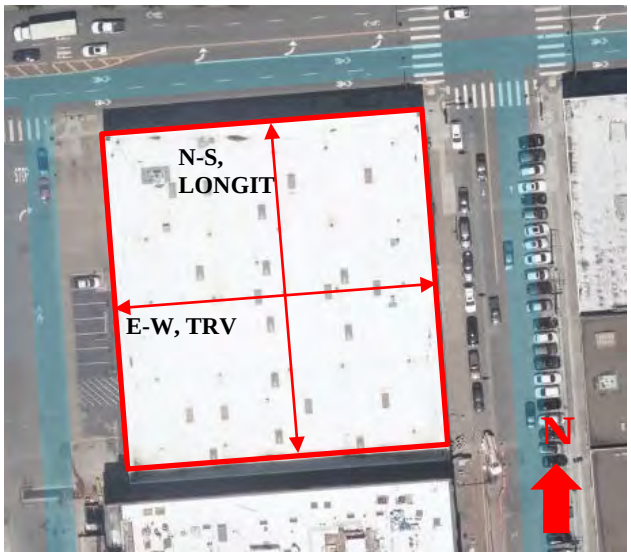
777 Mariposa, University of California San Francisco

CAAN #3074
777 Mariposa Street, San Francisco, CA 94143
UCSF Campus: Mission Bay

REGISTERED PROFESSIONAL ENGINEER
JOSEPH RICHARD MAFFEI
No. 3694
STRUCTURAL
STATE OF CALIFORNIA

DATE: 6 June 2023





Rating summary	Entry	Notes
UC Seismic Performance Level (rating)	IV	Based on ~~Tier 1 evaluation~~[1] ~~-~~peer review of seismic retrofit designed by DCI Engineers, completed in May 2023
Rating basis	Tier 1 and peer review of 2023 seismic retrofit	ASCE 41-17
Date of rating	2023	
Recommended UCSF priority category for retrofit	~~Priority B~~ n/a	Priority A=Retrofit ASAP Priority B=Retrofit at next permit application for modification
Ballpark total construction cost to retrofit to IV rating[2]	~~Medium~~ n/a	~~See recommendations on further evaluation and retrofit.~~ [Superseded by 2023 seismic retrofit]
Is 2018-2019 rating required by UCOP?	Yes	
Further evaluation recommended?	~~Yes~~ No	~~Tier 2 evaluation of the roof diaphragm and connections~~ Superseded by 2023 seismic retrofit]

Building information used in this evaluation

- Drawings, ThermoFisher Scientific, 777 Mariposa Street," by DCI Engineers, dated 21 December 2021 (21 sheets)
- Report, "Independent Structural Review, 777 Mariposa Street, San Francisco, CA," by Maryann T. Phipps, Estructure, 2018-09-27
- Drawings, "Essex International Building," by Cecil Wells, Jr., Consulting Engineer, 1969-06-09 (12 sheets)

Additional building information known to exist

- None (We reviewed drawings at the SF Department of Building Inspection. We found no drawings for the retrofit referenced in the 2018 Estructure report.)

Scope for completing this form

We visited the site to walk through the building, and we reviewed the building information above. ~~The original drawings were reviewed using a microfilm reader in the San Francisco Department of Building Inspection records department.~~ We peer reviewed the structural drawings and calculations for the seismic retrofit, and we visited the site during construction twice.

Brief description of structure

The building is rectangular in plan and was constructed in 1969. It was designed by Cecil Wells, Jr., Consulting Engineer. It has a main floor area of approximately 36,200 square feet, and a height of 27' to 34' to the top of the parapet. The exterior walls are 6-1/2" thick concrete and are of tilt-up construction with poured-in-place concrete pilasters connecting the wall panels. The building has a low-slope wood roof that is approximately 20' above the main level, with a 3' parapet.

Identification of levels: The main level is a warehouse floor, which is approximately 3' above street level. There is a lower level in the northeast corner of the building that is accessible as a parking area. There are enclosed partial mezzanine areas on the east and west side of the building.

[1] The evaluations at UCSF translate the Tier 1 evaluation to a Seismic Performance Level rating using professional judgment discussed among the Seismic Review Committee. Non-compliant items in the Tier 1 evaluation do not automatically put a building into a particular rating category, but such items are evaluated along with the combination of building features and potential deficiencies, focused on the potential for collapse or serious damage to the gravity supporting structure that may threaten occupant safety.

[2] Per Section 3.A.4.i of the Seismic Program Guidebook, the cost includes all construction cost necessitated by the seismic retrofit, including restoration of finishes and any triggered work on utilities or accessibility. It does not include soft costs such as design fees or campus costs. The cost is in 2019 dollars.

Structural system for vertical (gravity) load: The roof deck is 3/8" plywood supported by 2x4's at 2' spacing, spanning between 4x14's at 8' spacing, which are spanning to glulam beams at 23' spacing. The roof is supported by the exterior walls and 14 interior steel pipe columns.

Foundation system: The exterior walls and the columns are supported on concrete piers. The main floor is a concrete slab on grade except in the northeast corner, where the concrete slab is supported on concrete beams and girders spanning the lower level. The lower level floor is a concrete slab on grade.

Structural system for lateral forces: The concrete walls act as shear walls to resist lateral forces. The roof is a structural diaphragm that supports the walls in their out-of-plane direction and delivers in-plane lateral forces to the walls. As is typical of tilt-up buildings built prior to 1973, this building's original design left it vulnerable to the walls separating from the roof during a strong earthquake. The building has been retrofitted with additional connections that improve the transfer of out-of-plane lateral forces to the roof diaphragm in order to mitigate this vulnerability. The 2023 retrofit included further strengthening of the roof diaphragm and wall-to-roof out-of-plane connections.

Brief description of seismic deficiencies and expected seismic performance including mechanism of nonlinear response and structural behavior modes

Identified seismic deficiencies of the building include the following:

Structural feature or potential deficiency	Finding
Out-of-plane roof-to-wall anchorage	[Superseded by 2023 seismic retrofit] ~~It should be determined whether the retrofit wall anchors have sufficient capacity to meet the BPOE. Retrofit anchors are through-bolted to the north, east and west walls, and appear to be attached to the south wall with epoxy. The epoxied anchors may require testing as part of the evaluation work.~~
Roof diaphragm capacity	[Superseded by 2023 seismic retrofit] ~~Roof diaphragm capacity should be evaluated and increased, if necessary, to meet the desired performance objective (considering the potential that such strengthening might increase wall anchorage forces.)~~

Summary of review of non-structural life-safety concerns, including at exit routes [3]

The building is currently being used as a laboratory facility ~~for a temporary construction site storage~~. No non-structural seismic life-safety concerns were observed.

UCOP non-structural checklist item	Life safety hazard?	UCOP non-structural checklist item	Life safety hazard?
Heavy ceilings, feature or ornamentation above large lecture halls, auditoriums, lobbies or other areas where large numbers of people congregate	None observed	Unrestrained hazardous materials storage	None observed
Heavy masonry or stone veneer above exit ways and public access areas [Or older or vulnerable precast concrete cladding]	None observed	Masonry chimneys	None observed
Unbraced masonry parapets, cornices or other ornamentation above exit ways and public access areas	None observed	Unrestrained natural gas-fueled equipment such as water heaters, boilers, emergency generators, etc.	None observed

Discussion of rating

We assign a rating of V because the demand-capacity ratio (DCR) for roof-to-wall connections (per ASCE 41 Tier 1) is about 2. (Note that this rating differs from that provided in the previous report by Estructure, which did not compute the DCR of these connections). The 2023 seismic retrofit brings the structure to an SPR of IV.

[3] For these Tier 1 evaluations, we do not visit all spaces of the building; we rely on campus staff to report to us their understanding of the type and location of potential non-structural hazards.

Recommendations for further evaluation or retrofit

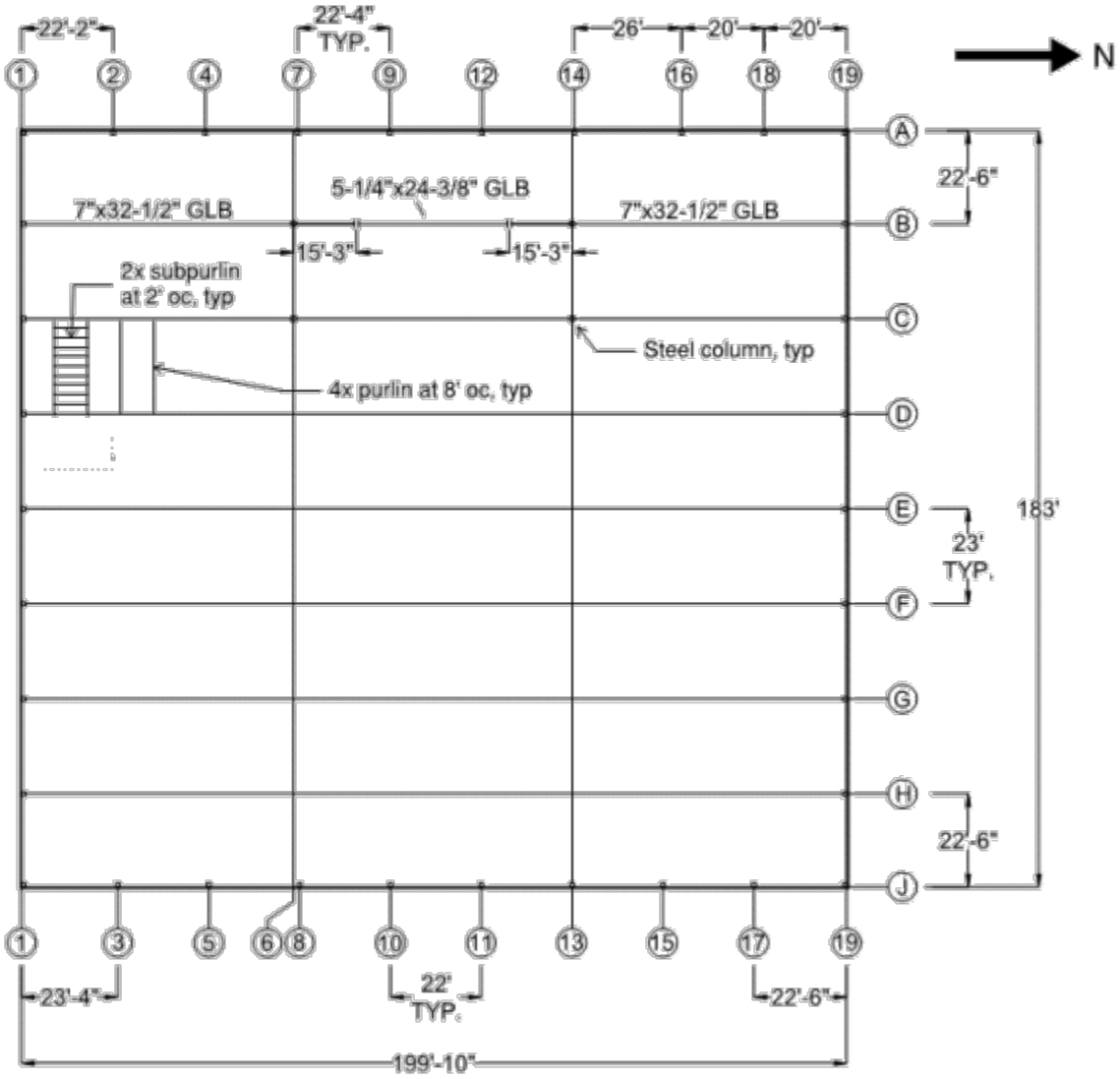
[Superseded by 2023 seismic retrofit.] ~~We recommend a Tier 2 evaluation of the roof diaphragm and the roof-to-wall connections. Subsequently, a retrofit plan to address any identified deficiencies should be developed and implemented.~~

Peer review comments on rating

[Superseded by 2023 seismic retrofit, see attached findings letter, dated 31 August 2021, for the seismic peer review of the retrofit.] ~~The structural members of the UCSF Seismic Review Committee (Lizundia, Moore, Phipps, Thiel) reviewed the presentation of this evaluation on 10 October 2019, and they reviewed this report. The SRC agrees that a Seismic Rating of V is appropriate. They note that if subsequent study occurs, ASCE 7 or other requirements for roof-to-wall anchorage could be investigated.~~

Additional building data	Entry	Notes
Latitude	37.763826	
Longitude	-122.391244	
Are there other structures besides this one under the same CAAN#	No	
Number of stories above lowest perimeter grade	1	The building is primarily 1 story, with a partial lower story in the northeast corner, and 2 small mezzanine areas.
Number of stories (basements) below lowest perimeter grade	1	Floor of partial lower story is below perimeter grade.
Building occupiable area (OGSF)	44,124	Includes partial lower story (parking)
Risk Category per 2016 CBC 1604.5	II	
Building structural height, h_n	26 ft	Structural height defined per ASCE 7-16 Section 11.2
Estimated fundamental period	0.2 sec	Estimated using ASCE 41-17 equation 4-4
Site data		
975 yr hazard parameters S_s, S_1	1.382, 0.534	
Site class	C	ASCE 7-16 Table 20.3-1 based on:
Site class basis	USGS map	earthquake.usgs.gov/hazards/urban/sfbay/soiltype/map/
Site parameters F_a, F_v	1.2, 1.466	Per ASCE 7-16 Tables 11.4-1 and 11.4-2
Ground motion parameters S_{cs}, S_{c1}	1.659, 0.783	
S_a at building period	1.66	
Site V_{s30}	750 m/s to 350 m/s	NEHRP definition for soil type C
V_{s30} basis	Estimated	
Liquefaction potential	No	
Liquefaction assessment basis	USGS map	earthquake.usgs.gov/hazards/urban/sfbay/liquefaction/sfbay/
Landslide potential	No	
Landslide assessment basis	USGS map	earthquake.usgs.gov/hazards/urban/sfbay/liquefaction/sfbay/

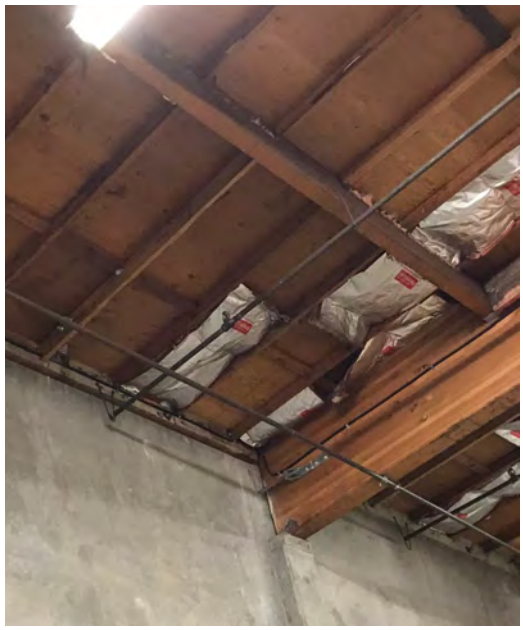
Active fault-rupture identified at site?	No	
Fault rupture assessment basis	USGS fault map	usgs.maps.arcgis.com/apps/webappviewer
Site-specific ground motion study?	No	
Applicable code		
Applicable code or approx. date of original construction	1967 UBC	Estimated based on year of construction
Applicable code for partial retrofit	Unknown	A partial retrofit was done, but a record of the work has not been located.
Applicable code for full retrofit	2018 CEBC	
Model building data		
Model building type	PC1	Precast or Tilt-up Concrete Shear Walls with Flexible Diaphragms
FEMA P-154 score	N/A	Not included here because we performed ASCE 41 Tier 1 evaluation.
Previous ratings		
Most recent rating	IV	Estructure report (listed above)
Date of most recent rating	2018-09-27	
2nd most recent rating	V	Tier 1 evaluations
Date of 2nd most recent rating	2020-06-26	
3rd most recent rating	-	
Date of 3rd most recent rating	-	
Appendices		
ASCE 41 Tier 1 checklist included here?	No	~~Refer to attached checklist file~~ [Superseded by 2023 seismic retrofit]



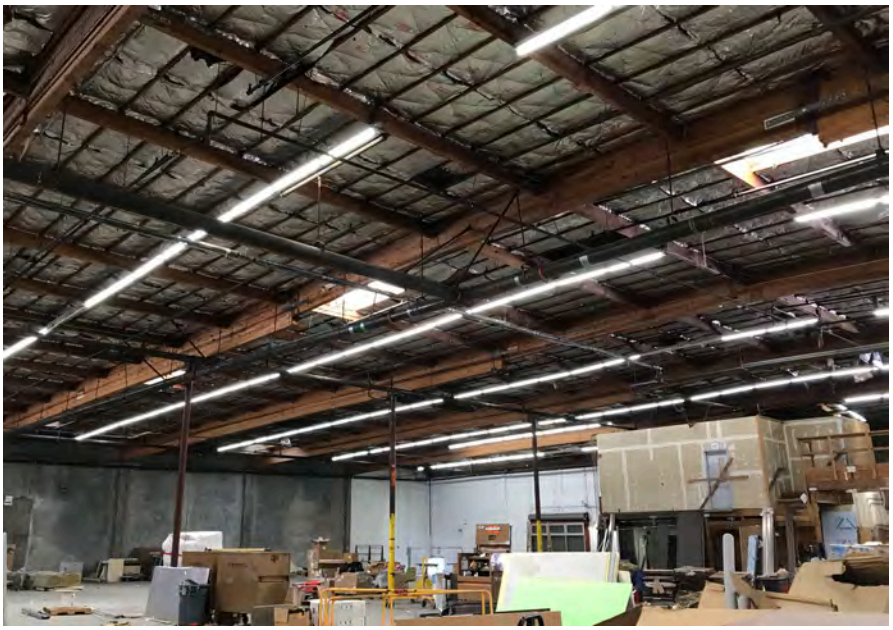
Roof Framing Plan Sketch (from 2018-09-27 Estructure report)

Partial east elevation

Partial east elevation

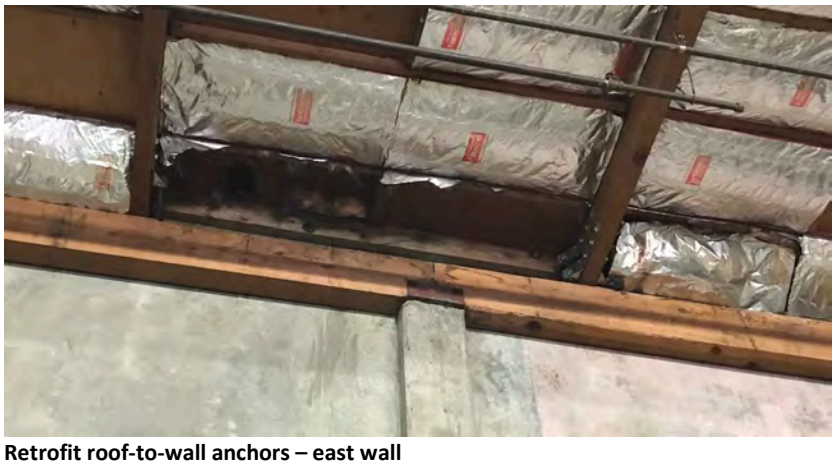


Retrofit roof-to-wall anchors – north wall



Warehouse - looking toward southwest corner

Office – northwest corner of building



Retrofit roof-to-wall anchors – east wall

MAFFEI
STRUCTURAL ENGINEERING

31 August 2021

Ms. Afsaneh Ahmadi
UCSF Building Permit Services
654 Minnesota Street, 2nd floor
San Francisco, CA 94143

cc: Lecha Price, UCSF BPS, Doug Carlson, IPS

Via Email: Afsaneh.Ahmadi@ucsf.edu , Lecha.Price@ucsf.edu , DCarlson@ipsdb.com

Subject: **Thermo Fisher Scientific West Coast Cell Therapy Facility**
777 Mariposa Street, San Francisco
Structural peer review findings

Dear Afsaneh:

This letter presents our findings from our structural peer review of the planned work at 777 Mariposa Street. UCSF recently leased this property to Thermo Fisher Scientific for use as their West Coast Cell Therapy Facility. Integrated Project Services (IPS) is the architect and project manager for the new facility, and DCI Engineers is the Structural Engineer of Record (SER). IPS retained Maffei Structural Engineering to conduct a structural peer review of the planned seismic retrofit work and structural modifications to the existing building. We are providing this letter in accordance with the scope of work indicated in our proposal to IPS dated 29 January 2021.

Description of the project

The existing building at 777 Mariposa Street is a rectangular warehouse building, approximately 200' x 183' in plan, constructed in 1969. The exterior walls are 6½" thick concrete and are of tilt-up construction with poured-in-place concrete pilasters connecting the wall panels. The main level is the warehouse floor, which is from 4 feet to 11 feet above street level. There is a partial lower level in the northeast corner of the building that is accessible as a parking area. The building has a low-slope wood roof that is approximately 21' above the main floor level, with a 3' parapet. The roof deck is ⅜" plywood supported by 2x4's at 2' spacing, spanning between 4x14's at 8' spacing, which are spanning to glulam beams at 23' spacing. The roof is supported by the exterior walls and 14 interior steel pipe columns. Foundation support for the exterior walls and the columns is provided by belled concrete piers. The main floor is a concrete slab on grade except in the northeast corner, where the concrete slab is supported on concrete beams and girders spanning the lower level. The lower-level floor is a concrete slab on grade.

As is typical of tilt-up buildings built prior to 1973, the building's original design had inadequate connections from the roof to the walls, which left the building vulnerable to the walls separating from the roof during a strong earthquake. Prior to UCSF ownership, the building was retrofitted with additional connections that improve the transfer of out-of-plane lateral forces to the roof diaphragm to mitigate this vulnerability. Maffei Structural Engineering conducted a Tier 1 seismic evaluation of this building for UCSF

in 2020 and found its Expected Seismic Performance Level to be V.

The current project includes seismic retrofitting of the existing building, structural modifications to the existing building to accommodate the new facility, and the installation of two steel mezzanine structures with moment-resisting frames that are independent of the existing building shell. Structural modifications include new exterior wall openings, a new concrete slab-on-grade main floor, partial removal of the suspended main floor over the former parking area, and reinforcement of some roof framing members to support suspended mechanical loads.

Findings

To an extent consistent with the scope of our review, our professional opinion is that the design approach and assumptions by the SER meet the requirements of the 2019 California Existing Building Code for a building owned by the University of California.

The seismic design objective meets the Basic Performance Objective for Existing Buildings (BPOE) as defined in ASCE 41-17, with Life Safety performance targeted at earthquake level BSE-1E and Collapse Prevention performance targeted at earthquake level BSE-2E. For this site, earthquake levels BSE-1E and BSE-2E are equivalent to earthquake levels BSE-R and BSR-C, respectively. The seismic retrofit design objective, therefore, also meets the requirements for Expected Seismic Performance Level IV, as defined by the UC Seismic Program Guidelines.

Scope of review

The materials included in our review and our scope of review are indicated in the attached comment log containing comments 1 through 52, dated 28 August 2021. As indicated in the comment log, the most recent set of complete structural drawings included in our review is the 90% Owner Review issue, dated 20 August 2020. Kleinfelder prepared the geotechnical investigation report, dated 21 May 2021. Applied Materials & Engineering prepared the existing materials investigation report, dated 19 May 2021.

Our findings assume that the resolutions of the comment log are implemented in the design. In peer review we do not check the implementation in the design. Based on the responses from the SER, we have marked all comments as resolved.

Limitations of Scope

Our scope is limited to Structural Peer Review. Our findings are based on the review of material submitted to us as indicated in our scope of work and the comment log. The responsibility for the structural design remains fully with the Engineer of Record, consistent with Section 6.1.1 of the SEAOC recommendations for Project Design Peer Review. [SEAOC, 2020, Recommended Guidelines for the Practice of Structural Engineering in California, Chapter 4, Project Design Peer Review, Professional Practice Committee, Structural Engineers of California, Sacramento California, Fifth Edition, January 2020.] This review does not include structural plan check.

Please call us if you have any questions on our Seismic Peer Review or this letter.

Sincerely,

Joe Maffei, S.E., Ph. D, LEED AP
Principal
Maffei Structural Engineering

Rob Ward, S.E.
Senior Structural Engineer
Maffei Structural Engineering