



## KENSINGTON FIRE PROTECTION DISTRICT

**DATE:** July 14, 2021

**TO:** Board of Directors  
Kensington Fire Protection District

**RE:** **Agenda Item 6b**  
Public Safety Building Renovation - Progress Update Including Architect Selection, Structural Engineer Selection, and Budget Amendment

**SUBMITTED BY:** Bill Hansell, General Manager

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### Recommended Action

Direct the General Manager to 1.) Enter into services contracts on behalf of the KFPD with MarJang Architecture and ZFA Structural Engineers to proceed with project design and engineering for the renovation of the Kensington Public Safety Building in accordance with the approved motion detailed in Agenda Item 4c of the April 14, 2021 KFPD Board of Directors meeting; and 2.) Amend the FY2021-2022 Budget to include Capital Inlay from the reserves of up to \$484,252 to fund the estimated Capital Outlay costs described in MarJang's and ZFA's fee proposal.

### Background

On June 21<sup>st</sup> and 22<sup>nd</sup>, 2021, GM Hansell, President Nagel, and Director Dommer interviewed the three firms who responded to the District's RFP for full architectural services to renovate the PSB as approved in the April 14, 2021 Board of Directors meeting. The prospective consultants included Guitierrez/Associates of Oakland, LCA Architects of Oakland/Walnut Creek, and MarJang Architecture of San Francisco. All three presented relevant experience, expanded on their interest in the project, and toured the building. Despite this close field of qualified candidates, MarJang Architecture stood out with their thorough proposal and proactive investigation of the project, as well as their innovative past public safety building work, clear schedule and work outline, environmentally sensitive interior design approach, extensive project team recommendation, and stakeholder communication skills. Although the RFP stated that selection would "not be based solely on cost", MarJang Architecture presented a complete cost proposal that was substantially less than the other two candidates. In a subsequent review of the interviews, GM Hansell, President Nagel, and Director Dommer agreed that MarJang Architecture would be a great fit for the Public Safety Building renovation project and, therefore, highly recommend that the District engage them in a services contract. GM Hansell followed-up with phone calls to MarJang Architecture's reference list of past clients, all of whom were highly complimentary of the firm's work and professionalism. MarJang Architecture's proposal is attached here for reference.

Separately, (2) engineering services proposals were received from IDA Structural Engineers of Oakland/Portland and ZFA Structural Engineers of SF/Silicone Valley/Sacramento/Napa/Santa Rosa. While IDA worked on the prior analysis of the building and presented a complete proposal for the full structural engineering scope of work, ZFA is also a highly regarded engineering firm in the Bay Area with direct experience on buildings in Alquist-Priolo Earthquake Fault Zones and

seismic evaluations of numerous fire stations. Either firm would be a good choice but MarJang Architecture has direct experience with ZFA and brought them to the table as part of their proposed team, as noted in their package. As with the Architecture RFP, the Structural Engineering RFP noted that cost would not be the sole determinant for selection, but ZFA proposed a fixed fee 30% lower than IDA's. After receiving the proposals, GM Hansell discussed the project in depth with both firms and, given the expertise, team relationship with MarJang Architecture, and cost savings, recommends that the District engage ZFA for structural engineering services on the project. ZFA's proposal is attached to this report.

In order to fund the work of the architect and structural engineer, GM Hansell recommends that the motion to contract with MarJang Architecture and ZFA Structural Engineers include the amendment of the FY2021-2022 Budget to utilize appropriate funds from the reserves, i.e. Capital Inlays, to cover the cost of the work, i.e. Capital Outlays. The project fees chart in MarJang Architecture's proposal totals \$484,252 and, therefore, that is recommended as the total amount to be approved at this stage as the projected "soft costs." It should be noted, though, that amount is for all consultants and for all stages of the project, including construction. Not all the sub-consultants will be engaged immediately and the schedule of the phases will vary based on numerous outside factors such as permitting, bidding, scheduling coordination, etc. Thus, these expenses will stretch out over the fiscal year and, depending on the actual construction schedule, into the subsequent fiscal year(s). Expenses will be tracked and reported on a monthly basis as part of the Board's regular meeting financial reports.

As an additional progress update on the renovation project, it should be noted that laser-measured CAD backgrounds of the existing PSB were commissioned and completed on July 1<sup>st</sup>, 2021. These files will be provided to the architects and engineers so they can begin work with accurate existing information previously unavailable.

With regards to the planning of temporary facilities, GM Hansell and Chief Pigoni met with the Executive Director of the Unitarian Universalist Church of Berkeley to tour the grounds and discuss the potential use of the lower parking lot during construction of the renovation project. In addition to the parking lot, there are some interior spaces that are available, if needed. Chief Pigoni provided a tentative program, or needs-list, to GM Hansell, and has spoken with the El Cerrito Planning and Building officials about the required permits that must be obtained. Further study of this location will continue as more information is gathered on utilities and potential consultants necessary to advise on storage units, trailers, and other required temporary structures.

GM Hansell is consulting with Mack5 on the above temporary facility needs/process, as well as on the appropriate consultant services contract templates.

### **Fiscal Impact**

If approved, up to \$484,252 of the KFPD capital improvement reserves will be used to fund the soft costs of the PSB renovation project over one or more fiscal year cycles.



**KENSINGTON FIRE PROTECTION DISTRICT  
RFP 2021-03**

**RESPONSE TO REQUEST FOR PROPOSAL  
ARCHITECTURE SERVICES**

Bill Hansell, General Manager  
Kensington Fire Protection District  
217 Arlington Avenue  
Kensington, CA 94707

**JUNE 2, 2021**

**MARJANG**



# MARJANG

June 2, 2021

Bill Hansell, General Manager  
Kensington Fire Protection District  
217 Arlington Avenue  
Kensington, CA 94707

Dear Mr. Hansell & Selection Committee Members,

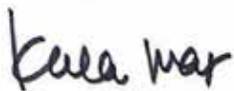
We are pleased to present our response to Request for Proposal for Architecture Services, RFP 2021-03 for the Kensington Fire Protection District (KFPD) renovation of the structure at 217 Arlington Avenue, Kensington, California.

MarJang Architecture is a full service architecture firm with experience in the design of fire and essential service facilities in the Greater Bay Area. The firm was established in 2005 and has over 15 years of experience in the design of spaces for institutional, commercial or private clients on projects that include rehabilitation of new construction, adaptable re-use and restoration within historic or existing structures.

Our firm's experience and history with fire facilities and public projects is shared in the Firm History with Public Projects section of this response.

We have assembled a highly qualified team of architects and engineers that have worked together providing design services for public agencies and fire facilities and look forward to the possibility of working with the Kensington Fire Protection District to deliver a renovation of the fire station that the community for which it serves can be proud of for years to come.

Sincerely,



Karen Mar, Principal, C25227  
email | karen@marjang.com



# QUALIFICATIONS

## FIRM HISTORY WITH PUBLIC SAFETY PROJECTS

Founded in 2005, we primarily practiced in the private residential and commercial realm and in 2012 we were selected to work on our first public project, as a team member on the Salesforce.com Global Headquarters which led to the development of our practice in the public sector.

Our private residential portfolio is what gave our firm to access to work on our first project for the San Francisco Fire Department (SFFD). We were approached in 2013, by Shah Kawasaki Architects, experts in fire station design to collaborate on the design of San Francisco International Airport's Firehouse No. 3. We were tasked to "make this house more of a home" and to "de-institutionalize" the house areas while still complying with all related code requirements and San Francisco ESER (Earthquake Safety and Emergency Response) Standards. This project also included the SF Fire Department Airport Division Headquarters and Training Facilities so our clients wanted it to not only "be a home to the firefighters that work so hard" in this environment but also to "reflect the pride of the department."

In addition to our design duties on the team, we also led an 8-week programming effort and the production of our team's Basis of Design Report. This involved 12 stakeholder groups from the aesthetic architecture to door hardware and fire alert systems.

We delivered SFO Firehouse No. 3 in 2017 and were fortunate enough to be selected for our second fire department project, the SFFD Ambulance Deployment Facility for San Francisco Fire Department's EMS Division. This time we were partnered with MEI Architects who primarily practice in Healthcare. That partner selected us because of our experience at SFO. This project is the administrative headquarters and re-stock facilities for the city's fleet of 52 vehicles. The building also includes administrative offices, gym, kitchen and day room, and conference and training rooms for the rotating staff of 250 EMS personnel.

We were given the design architect role on this project after successfully assisting our Prime JV Partner, SF Public Works and the San Francisco Fire Department in value engineering \$20 million out of a \$45 million original design by SF Public Works. MarJang's concept design was selected over our JV Partner's concept because it met the budget requirements of the public agencies with a simple solution. We reduced the program area to what is necessary for the facility and parked all of the ambulances on a yard and only designed a parking garage for 70 personal vehicles.

Since then we have also successfully led a Design/Build project team through programming, design and construction on our second airport fire station for San Jose Mineta International Airport. The SJC ARFF Fire Station 20 project is our largest fire facility, with (5) Aircraft Rescue & Fire Fighting (ARFF) vehicle bays that serve the airfield and (1) landside fire apparatus bay that serves the terminal buildings and surrounding neighborhood. This project is currently under construction utilizing a Guaranteed Maximum Price (GMP) & Design/Build delivery model. We are the Lead Design Architect on this project and it is scheduled to be completed in December 2021.

# PROPOSED CONSULTANT TEAM

MarJang is a local design firm that prides itself on delivering specialty projects for both private clients and public agencies and we feel that together with the consultant team that we have assembled for the Kensington Fire Protection District, we will make an ideal candidate to assist with the complexity of your station renovation.

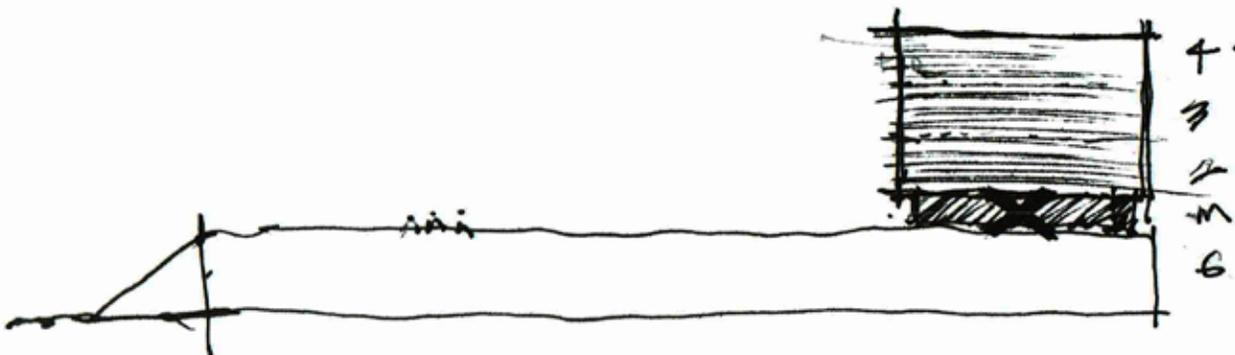
The following list of consultants have worked with MARJANG on past fire facility projects. BKF has also provided past study information for the project outlined in the RFP. We suggest this team for the project but understand that the Structural Engineer of Record may be selected under a separate RFP process.

- MARJANG Architecture** | Architect of Record
- BKF** | Survey & Civil Engineer
- ZFA STRUCTURAL ENGINEERS** | Structural Engineer
- HALEY & ALDRICH** | Geotechnical Engineer
- LIST ENGINEERS** | Mechanical, Electrical, Plumbing & Fire Protection Engineer
- SMITH, FAUSE & MCDONALD** | Communications & Fire Alert Engineer
- MICROESTIMATING INC.** | Cost Consulting

ZFA Structural Engineers is recommended to Kensington FPD because our firm chooses to collaborate with them on projects where we have the ability to select our engineer. We find ZFA to be cost-effective and less conservative than many of their peers and when unique design solutions for challenging situations are presented ZFA has provided our firm with solutions that are integrated into the overall project intent with a mindfulness towards budget that is exceptional.

We have also worked with Biggs Cardosa Associates (SJC ARFF Fire Station 20), Pannu Larsen McCartney (SFO Firehouse No. 3), and SOHA Engineers (SFFD Ambulance Deployment Facility) on our past projects.

Consultant team services are listed on the following page for our proposed project team. We are listing MicroEstimating Inc. as an alternate cost proposal consultant but would be amenable to working with Mack 5 should the Kensington Fire Protection District prefer that consultant.



SFFD Ambulance Deployment Facility Concept Sketch

# PROJECT APPROACH

## STATEMENT OF UNDERSTANDING

We have evaluated the project information including the plans, cost models, feasibility study and past information regarding ADA requirements and the actions taken by the Kensington Fire Protections District and understand the current direction for the project.

It is our understanding that our team is to utilize the Public Safety Building Concept Plans as a basis of design for the renovation of the existing building located at 217 Arlington Avenue, Kensington, California. We expect to begin work after award with a Concept Validation Phase or Schematic Design that would assist Kensington FPD to fully define the program and cost criteria for moving the project forward.



Proposed RFP Concept Plan | Second Floor



Proposed RFP Concept Plan | Ground Floor

# PROJECT APPROACH

## HEALTHY INTERIORS

The interior renovation of the station will consist of primarily updating finishes, casework, systems, furnishing, fixtures and equipment. We have extensive experience in residential renovation for private clients and this has helped us to better our public safety projects with interiors that aim to “de-stress” the environment, make the house areas more “home-y” and give our hard-working fire personnel a work place environment that will contribute to their health and well being.

Our first fire facility was with a public safety expert who selected our firm to “de-institutionalize” the interiors of the firehouse. The house areas included living quarters for 10 fire personnel and the administrative headquarters for SFFD’s airport division. We designed, specified and detailed all materials at the station and also assisted with specification, fabric selection and order of the furnishings and equipment for the project.

Materials selected are all low-emitting for indoor air quality and sustainable for recycled content and fabrication processes.



Interior Finishes | SFO Firehouse No. 3, San Francisco International Airport

# PROJECT APPROACH

## **MARJANG Architecture** Architect of Record

MarJang will work closely with the Kensington Fire Protection District and key departmental stakeholders to validate program and concept documents, project work-flow schedules and cost proposals that specifically relate to each discipline. Our responsibilities will include full service architectural design, interior design, FF & E procurement, 3d Modeling/Rendering, consultant coordination, permit and construction documentation including specifications, planning approvals and construction observation through activation and commissioning..

Essential Service Facility experience includes remodels for St. Helena Hospital's Lobby and Well Now Center, and new construction for San Francisco International Airport Firehouse No. 3 & South Field Checkpoint, San Francisco Fire Department Ambulance Deployment Facility and San Jose Mineta International Airport's ARFF (Aircraft Rescue & Fire Fighting) Fire Station 20. We are also currently working on a team providing a renovation to the US Customs and Border Protection Federal Inspection Station at the San Francisco International Airport, which is located on the arrivals deck of the International Terminal Building.

## **BKF** Survey & Civil Engineer

BKF will provide survey and civil engineering services that will include site accessibility design, project coordination, design documentation and specifications, coordination of underground utilities, grading and drainage, horizontal controls and parking plans. A topographic survey will also be provided to the renovation.

BKF has completed 24 Fire Station projects in the Greater Bay Area and has worked with the Kensington Fire Protection district on past reports for the project in addition to working with MarJang on the SJC Fire Station 20 project at San Jose Mineta International Airport.

## **ZFA STRUCTURAL ENGINEERS** Structural Engineer

ZFA Structural Engineers (ZFA) will work to validate the structural assumptions and analysis provided by Kensington FPD and provide design documentation that will include foundation and framing plans, BIM Modeling, outline and design specifications and detailing. They have provided MarJang with structural engineering services for over 6 years and also have a robust fire station portfolio.

Accustomed to the requirements of the California Essential Services Buildings Safety Act of 1986, as well as apparatus bay construction, dormitory and administration needs, ZFA has provided safe and effective structures for countless municipalities for many years. ZFA has five offices in the greater Bay Area and San Carlos office will be providing services on the Kensington FPD project.

## **HALEY & ALDRICH** Geotechnical Engineer

Haley & Aldrich has reviewed the geotechnical information about the project provided on the KFPD website and has indicated that if they can also review the additional geotechnical studies prepared by Seidelman Associated's (1990) and Kleinfelder (2009) they may be able to reduce their field investigation by eliminating drilling. For the purposes of this proposal we have included a reduced fee for this discipline that only assumes a Field Reconnaissance Task to be combined with a Geotechnical Investigation Report.

The firm is currently serving as Geotechnical Engineer on our SJC ARFF Fire Station 20 project.

# PROJECT APPROACH

## **LIST ENGINEERING** Mechanical, Electrical, Plumbing & Fire Protection Engineer

List Engineering has offices in Monterey and San Francisco and extensive experience at engineering systems for existing and new buildings in the Greater Bay Area. The firm will be providing comprehensive services including review of existing documentation and existing conditions and developing design solutions that address budget and sustainability while reducing operating costs. Services for the Kensington FPD renovation will include mechanical, electrical and plumbing engineering and fire protection design for design/build implementation. Mechanical systems for the station will include vehicle exhaust and Electrical systems will include emergency power distribution design, lighting control systems, emergency egress lighting and exterior lighting and fire alarm. Coordination with our communications engineer will ensure that all systems for the station are addressed.

## **SMITH FAUSE & MCDONALD** Communications & Fire Alert Engineer

Established in 1986, SFMI will be providing specialized services for public address systems, video distribution, structured cabling, wireless networks and fire infrastructure. They have worked on numerous fire facilities, emergency operations centers, data centers and police and fire facilities. The firm has collaborated with MarJang on all three of our fire facilities. Acoustical Engineering is also an available service that is currently excluded from their scope on the Kensington FPD renovation project. SFMI will provide Exterior Sound Isolation Reporting required by code only.

## **MICROESTIMATING INC.** Cost Consultant

MicroEstimating Inc. has been providing preconstruction estimating and scheduling services for over 12 years for both public and private clients throughout California. Past experience with MarJang includes cost consulting for the SFFD Ambulance Deployment Facility and our recently awarded As Needed Contract with SF Public Works.

With a reputation for realistic cost estimates, insightful value engineering, and thorough constructability reviews have resulted in most of our clients becoming repeat clients. Services for the Kensington FPD renovation will include cost estimating, budget & cost control, constructability review and value engineering assistance.



Ridhwan Center Renovation, Berkeley, CA

# PROJECT APPROACH

## SCHEDULE & WORK OUTLINE

We would expect to utilize a the following project schedule for the design phases for a building of this size. This design schedule has been utilized on projects as large as 20,000 sf ( SJC ARFF Fire Station 20) without schedule extensions. Our team fees have also been based off of the following schedule for deliverables.

### Concept Validation & Schematic Design (8 weeks)

- Program Validation & Confirmation - Workshop Format
- Validate Building Assessments with Consultant Team
- Verify Code Requirements
- Study Site Planning & Accessibility
- Proposed Plan Refinements
- Develop Building Systems
- Specifications Table of Contents
- Preliminary Cost Estimate

### Design Development (10 weeks)

- Floor Plan Development
- Engineering Systems Coordination
- Character & Material Concepts
- Interiors Development
- Preliminary Envelope Detailing
- 2-part Specifications Development
- Update Cost Estimate and Value Engineering Strategies if necessary

### Construction Documents (10 weeks)

- Final Production on Documentation for Permit Submission, All Disciplines
- Finish, Window & Door Schedules
- Hardware and Security Refinement
- Continued Engineering Systems Coordination and Refinement
- Final 3-part Specifications
- Final Cost Estimate & Value Engineering Strategies if necessary

### Permit/Bid/Conform Set (4 weeks)

- Update Construction Documents and Specifications to conform with permit and planning comments and final key stakeholder review comments
- Bid Questions and Addenda as required

### Construction (52 weeks)

- Update Construction Documents and Specifications to conform with permit and planning comments and final key stakeholder review comments

# SCHEDULE & FEES

## FEE PROPOSAL

The fees listed below by discipline and phase have been provided and confirmed by our consultant team. Consultant Team Members may be selected independently but we are suggesting this team to provide comprehensive services.

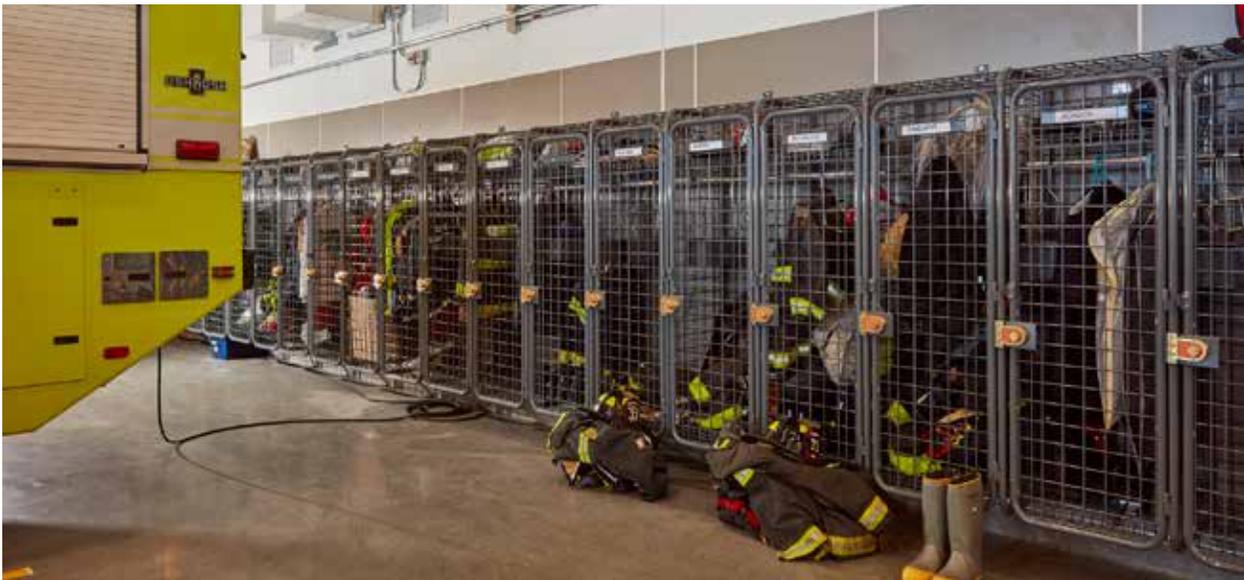
The consultant mark-up fee can be omitted if Kensington FPD contracts directly with individual team members. The 5% fee is utilized to manage the accounting and contractual requirements for administrative and invoicing on the project. Consultant coordination for project documents will be provided by MarJang Architecture regardless of contract holder.

The geotechnical engineering fee will increase by \$12,500.00 should it be determined that Subsurface Investigation and Laboratory Testing (including drillers and outside services) is required by the renovation project.

PHASE DESCRIPTION	MARJANG ARCH	BKF CIVIL	ZFA STRUCTURAL	LIST MEP	HALEY & ALDRICH GEOTECH	SFMI SPEC SYSTEMS	MICROEST COST	PHASE SUBTOTAL
Concept Validation & Schematic Design	\$28,640.00	\$6,000.00	\$8,430.00	\$9,600.00	\$10,000.00	\$1,800.00	\$3,480.00	\$67,950.00
Design Development	\$35,800.00	\$8,200.00	\$12,240.00	\$33,000.00	\$0.00	\$7,340.00	\$8,700.00	\$115,280.00
Construction Documents	\$35,800.00	\$16,500.00	\$23,580.00	\$33,000.00	\$0.00	\$12,430.00	\$7,540.00	\$138,850.00
Bid, Permit & Conform Set	\$4,520.00	\$3,400.00	\$5,640.00	\$2,000.00	\$0.00	\$630.00	\$0.00	\$16,190.00
Construction	\$76,440.00	\$7,000.00	\$13,100.00	\$18,400.00	\$0.00	\$4,230.00	\$0.00	\$119,170.00
<b>PROJECT TOTALS</b>	<b>\$181,200.00</b>	<b>\$41,100.00</b>	<b>\$62,990.00</b>	<b>\$96,000.00</b>	<b>\$10,000.00</b>	<b>\$26,430.00</b>	<b>\$19,720.00</b>	<b>\$457,440.00</b>

Reimbursables \$14,000.00  
5% Consultant Mark-Up \$12,812.00

**TOTAL PROJECT FEES \$484,252.00**



EXAMPLE PROJECT 1



# SFO FIREHOUSE NO. 3

San Francisco International Airport, CA | Completed 2017



## LOCAL AGENCIES

City & County of San Francisco  
San Francisco International Airport  
San Francisco Fire Department

## KEY TEAM MEMBERS

MarJang Architecture  
Smith Fause & McDonald Inc.

## SIZE

20,000 square feet

## PROJECT DESCRIPTION & SERVICES PROVIDED

MarJang (formerly Yama and Mar Design) in joint venture with Shah Kawasaki Architects completed a 20,000 sf administrative headquarters for the SFFD Airport Division at San Francisco International Airport. The project also included the re-design of the South Field Checkpoint, a secure access point onto the Air Operation Area. The project includes a training center, Firehouse No. 3 and living and work areas for fire fighting personnel. Completed in February 2017, it was designed to meet LEED Gold v4 standards.

MarJang was responsible for the design of the interiors as well as the secure checkpoint on a 3-acre site. Administrative areas included main lobby, watch room, offices, break room, conference areas and training room in addition to the living quarters of the facility. MarJang led the project management, programming, Stakeholder Engagement Process (SEP), secure checkpoint and site design, and interior design including FF & E, and project accounting, in addition to supporting architectural design & detailing, consultant coordination, and LEED certification processes.

EXAMPLE PROJECT 2



# SFFD AMBULANCE DEPLOYMENT FACILITY

San Francisco, CA | Completed 2021



## LOCAL AGENCIES

San Francisco Public Works  
San Francisco Fire Department

## KEY TEAM MEMBERS

MarJang Architecture  
Smith Fause & McDonald Inc.  
MicroEstimating Inc.

## SIZE

24,000 square feet

## PROJECT DESCRIPTION & SERVICES PROVIDED

MarJang is design architect for this new facility in the Bayshore neighborhood of San Francisco with MEI Architects (Joint Venture Partner). This essential services facility houses the SFFD EMS Division administrative offices, staff areas for 250 personnel and ambulance restocking functions for dynamic deployment of our city's fleet of 50 ambulances with electrical trickle charging, a passenger vehicle garage and a fueling station. The project will be LEED Gold Certified.

Originally the facility had been designed by SF Public Works and it was intended that our team assist in execution of this Schematic Design, however, this SF PW scheme was estimated at \$20 million over budget. It was requested that the design team provide (2) concepts to bring the design into alignment with the SF Public Works budget. Our JV Partner requested that we provide the second alternate scheme. MarJang's concept design solution brought the project into budget alignment and was selected by the San Francisco Fire Department and SF Public Works. The project was just completed in May of 2021.

EXAMPLE PROJECT 3



# SJC ARFF FIRE STATION 20

San Jose, CA | Completion December 2021



## LOCAL AGENCIES

City of San Jose  
San Jose Mineta International Airport  
San Jose Fire Department

## KEY TEAM MEMBERS

MarJang Architecture  
BKF  
Haley & Aldrich  
Biggs Cardosa  
Smith Fause & McDonald Inc.

## VALUE & COSTS

20,000 square feet

## PROJECT DESCRIPTION & SERVICES PROVIDED

MarJang is the design architect for this new facility at San Jose Mineta International Airport. The project is a 20,000 sf fire station with (5) airside service bays that tend to the airfield and (1) landside bay that serves the terminals and surrounding community. The station has (10) dorm rooms, offices, conference/training rooms and shared amenities including a watch room, exercise room, kitchen & day room.

MarJang also led the stakeholder engagement process for programming of the station with airport and San Jose Fire Department stakeholder groups. The effort took 8 weeks and resulted in a Basis of Design Report utilized by the design team for execution of the project.

C. Overaa & Company is the General Contractor and MarJang is the Design Architect for the Design/Build delivery of the project. BKF provided Civil & Traffic Engineering services and Biggs Cardosa is Structural Engineer of Record for the project.

EXAMPLE PROJECT 4



# ST HELENA HOSPITAL RENOVATION

St. Helena, CA | Completed 2011



## LOCAL AGENCIES

St. Helena Hospital

## KEY TEAM MEMBERS

MarJang Architecture

## SIZE

5,000 square feet

## PROJECT DESCRIPTION & SERVICES PROVIDED

MarJang collaborated as Design Architect with the health care specialized firm of Moore | Uebel Architecture to assist our client, St. Helena Hospital, in changing their identity to one that depicted their “wellness destination” roots. The project included remodel of all lobby and reception areas throughout the main floor of the hospital and was constructed while the hospital remained operational. Class A and OSHPD approved materials for an essential services facility were installed.

Relevant experience includes: tie-in to existing HVAC systems, accessibility upgrades to entrance and lobby areas, materials selection for class A finishes, FF & E, and construction within an active operational facility.

EXAMPLE PROJECT 5



# RIDHWAN CENTER RENOVATION

Berkeley, CA | Completed 2012



## LOCAL AGENCIES

City of Berkeley

## KEY TEAM MEMBERS

MarJang Architecture

## SIZE

5,000 square feet

## PROJECT DESCRIPTION & SERVICES PROVIDED

MarJang collaborated as Architect of Record to bring this renovation project to completion. We assisted with the permit acquisition and construction phase activities, working closely with McCutcheon Construction. This renovation turned a former church into a new place of spiritual development and included adding areas to an existing historic structure.

Similarities to the Kensington FPD renovation include accessibility upgrades to the entrance and lobby areas, a small addition at the lower level for additional classrooms and a kitchen remodel. Site improvements included accessible parking areas and the re-work of drainage on this upsloping lot in a primarily residential neighborhood. The project renovation won a Historic Preservation Award from the City of Berkeley.



SFO Firehouse No. 3, San Francisco International Airport

## REFERENCES



SFFD Ambulance Deployment Facility

### SFO FIREHOUSE NO. 3 AND SOUTH FIELD CHECKPOINT RELOCATION

Project Owner | Reference:

Judi Mosqueda  
San Francisco International Airport  
Director of Project Management  
Design & Construction Division  
710 S. McDonnell Road  
San Francisco, CA 94128  
phone | (650)821-0164  
email | judi.mosqueda@flysfo.com

### SFFD AMBULANCE DEPLOYMENT FACILITY

Project Owner | Reference:

Laura Tanigawa, Deputy Bureau Manager  
SF PW Building Design & Construction  
49 S. Van Ness Avenue  
San Francisco, CA 94103  
phone | (415)994-7293  
email | laura.tanigawa@sfdpw.org

### SJC ARFF FIRE STATION 20

Project Owner | Reference:

Kirk Ruffo, SJC Project Manager  
San Jose Mineta International Airport  
1701 Airport Boulevard, Suite B-1130  
San Jose, CA 95110  
phone | (408)392-1139  
email | kruffo@sjc.org

Project Owner | Reference:

Chris DeGuzman, CSJ Project Manager  
City of San Jose  
200 E. Santa Clara Street  
San Jose, CA 95113  
phone | (408)535-8481  
email | chris.deguzman@sanjoseca.gov

THANK YOU FOR YOUR CONSIDERATION

MARJANG



# ZFA STRUCTURAL ENGINEERS

SAN FRANCISCO | SILICON VALLEY | SACRAMENTO | NAPA | SANTA ROSA



PROPOSAL FOR

## STRUCTURAL ENGINEERING SERVICES - RFP 2021-04

*Kensington Fire Protection District | June 02, 2021*

June 2, 2021

Bill Hansell, General Manager  
Kensington Fire Protection District  
Submitted via email to: bhansell@kingsingtonfire.org

Subject: Proposal for Structural Engineering Services - RFP 2021-04

Dear Mr. Hansell,

ZFA Structural Engineers (ZFA) is pleased to present our qualifications to provide structural engineering services to the Kensington Fire Protection District (KFPD) for the seismic assessment and retrofit of the existing two-story police and fire station. Over the past 45 years, ZFA has been assisting local agencies in a wide variety of public works, economic development, education, and civic projects. We are proud to have formed these relationships based on open, meaningful communication, and by continuously offering the highest level of service by providing accessible, rational designs that respond to the Client's needs. With our team of highly qualified and innovative engineers, ZFA is looking forward to providing the KFPD with unparalleled structural engineering services on this project.

ZFA is poised and ready to assist you with your project. As you will see in the proposal we prepared in response to your Request for Proposal (RFP) 2021-04, ZFA brings a significant amount of experience that will directly benefit the KFPD. Highlights of this experience include:

- **Technical Experts.** Our principals are experts in the National Standard for the Seismic Evaluation and Retrofit of Existing Buildings, ASCE 41, plus they maintain active roles in the development of codes, standards, and commentaries related to the field of structural engineering. This is demonstrated by our recent leadership role in the development of ASCE 41-17, and participation and authoring of key sections of documents for FEMA that establish standards for the industry. Additionally, ZFA is heavily involved in the U.S. Resiliency Council (USRC) Building Rating System Committee and a founding member of the USRC Technological Advisory Council. This group developed a rating system for building performance in the areas of life safety, repair cost, and resumption of operations resulting from an earthquake. This involvement gives us a unique insight which ultimately also benefits our clients on their projects.
- **Experience with Alquist-Priolo Earthquake Fault Zones.** ZFA's experience includes assessments, evaluations, and remodel/retrofit work for existing structures located within the Alquist-Priolo Fault Zone Special Study Area. This experience covers multiple strategies from targeted work to limit code mandated triggers for the facility to complete structural retrofit to upgrade the building to current code. ZFA is currently working on two projects located in the Alquist-Priolo Earthquake Fault Special Studies Zone Act, including a small tenant improvement and targeted strengthening in the area of work for a fire station located in San Bruno and the complete retrofit and upgrade to an immediate occupancy use structure for a four-story office building for East Bay Regional Park Public Safety & Administrative. In addition to our recent experience, ZFA has performed seismic evaluations on numerous fire stations to determine the anticipated performance and functionality following a maximum credible earthquake (MCE), such as the Napa Fire Station No. 1, Moraga-Orinda Fire Station No. 43, and the Hayward Fire Stations No. 1-5.
- **Local Team with Essential Services Project Experience.** ZFA's four out of five offices are located throughout the Bay Area, with numerous essential service projects in the East Bay that include new ground-up construction and retrofits. We have also provided a list of similar projects and scope to that of the proposed project on page 7. Additionally, we

have strong established working relationships with many local area contractors, architects, and sub-consultants. Our experience includes studying, analyzing, and designing both existing and new structures, strategizing the best approach for repairs, and participating in the construction administration process. We also have a depth of experience with seismic retrofits, condition assessments, expansions, renovations, and remodels.

ZFA is ready to begin this project as soon as possible. Based on our available resources and continually updated internal scheduling, the firm is well-poised to handle the workload and scheduling as required to complete the project a timely and thorough fashion and are readily available to begin work when necessary. Servicing regional jurisdictions is an important goal for ZFA, as we take pride in contributing to the overall resilience of our communities.

I, Luke Wilson, will serve as the Principal-In-Charge, responsible for the overall contract, provide senior technical oversight for the project, and will be the main point of contact for the KFPD during the proposal and interview process. Matt Frantz, will serve as the Project Manager and will provide the day-to-day management of the project, responsible for project updates, identification of key issues, monitoring the schedule and budget, and leading the structural design team. Both Matt and I will always be available to the KFPD staff from start to finish for this project. With a staff of more than 75 people, our firm has fully integrated offices in Silicon Valley, Santa Rosa, Napa, San Francisco, and Sacramento. Using Microsoft Teams, BIM, and other collaborative software, they work together successfully across offices, and with key stakeholders to create successful solutions within schedule and budget.

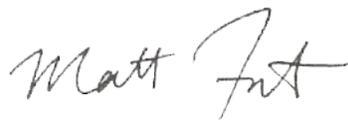
Should you have any questions, please feel free to contact me directly at the phone or email provided below.

Thank you for your consideration of our firm's proposal and qualifications. We look forward to the opportunity to work with the KFPD and to provide Structural Engineering Services for the project outlined in RFP 2021-04.

Sincerely,



Luke Wilson, SE  
Associate Principal | Principal-In-Charge  
lukew@zfa.com | 707.526.0992  
1212 Fourth Street, Suite Z  
Santa Rosa, CA 95404



Matt Frantz, SE  
Associate Principal | Project Manager  
mattf@zfa.com | 650.394.8869  
1390 El Camino Real, Suite 100  
San Carlos, CA 94070

## » EXPERIENCE

ZFA has decades of experience providing structural design and analysis of new construction, assessments, evaluations, and structural retrofits for public works projects, including essential services facilities, training centers, and emergency operations centers throughout the state. Accustomed to the extra requirements of the California Essential Services Buildings Safety Act of 1986, as well as emergency operations and administration needs, the California Building Code Existing Structures chapter, the International Existing Building Code and ASCE 41 Seismic Evaluation and Retrofit of Existing Buildings, ZFA has provided safe and effective structures for countless authorities.

Our firm has extensive experience in the design of essential service facilities throughout Contra Costa County and the surrounding areas in the following areas of expertise:

- Structural assessments and seismic evaluations
- Structural retrofits of existing structures
- Modernizations
- New construction
- Site-related structures
- Phasing for occupied facilities
- Renovations
- Design-build delivery methods

Additionally, ZFA engineers are knowledgeable in NFPA 1221 and the State Fire Marshal codes, which are required for State-owned emergency operations and dispatch facilities. With a strong understanding of state, city, and county public agency process, ZFA is a trusted advisor for structural design services for local, regional, and state civic centers, fire stations, schools, correctional facilities, law enforcement facilities, maintenance facilities, and more.

Our principals maintain active roles in the development of codes, standards, and commentaries related to the field of structural engineering. This is demonstrated by our recent leadership role in the development of ASCE 41-17, *The National Standard for the Seismic Evaluation and Retrofit of Existing Buildings* (analysis and foundation chapters); continued participation and authoring of key sections of documents for FEMA that establish standards for the industry; and by continual invitations to speak at conferences such as the Structural Engineers Association of California and the California Preservation Foundation to familiarize other engineers on these new codes and standards.

**Structural Assessments.** ZFA has performed a large number of seismic and condition assessments for structures including civic centers, school facilities, industrial complexes, and hospitals totaling over 4 million square feet of assessments, and has comprehensive expertise in the use of the national standard for the evaluation and retrofit of existing structures, ASCE 41. Additionally, we performed seismic evaluations on 101 campuses in the Oakland Unified School District (OUSD) to identify and prioritize funding for high-risk schools. We also developed a Seismic Safety Enhancement Program for the Napa Unified School District, and then pursued seismic retrofit projects on three campuses in 2012. We were also selected by the Office of Public School Construction in 2010 to evaluate the collapse potential of school buildings on five campuses in Northern California, where we collaborated with DSA to develop new assessment tools for collapse potential based on the ASCE 31 standard.



**4M+**  
**SQUARE FEET OF  
BUILDING  
ASSESSMENTS**

As part of the process of performing building condition assessments, seismic evaluations, retrofits, and modernizations, ZFA has often been required to document the existing conditions of a building. This can involve visual observation, creating as-built drawings via detailed measurements, or working with sub-consultants to provide materials testing services. Based on previous experience, ZFA is highly experienced in the assessment of what services are required, what level of detail is necessary, and appropriately direct project resources to obtain the information required for each project.

## » EXPERIENCE

**ASCE 41 Standard Development and ATC Code Development.** ZFA staff are seasoned in the application of industry codes and are active in the current seismic code writing and interpretation. This direct involvement in code creation gives ZFA insight into the intent and purpose of the provisions in this relatively young and continually evolving standard, allowing us to effectively navigate its provisions and understand the best application of its provisions to the structures we design and evaluate.

**Structural Evaluation and Feasibility Reports for Public Agencies.** Specifically relevant to this project is ZFA's experience with both seismic evaluations and retrofit as well as fire station experience. ZFA is well-versed in the use and application of ASCE 41 and its predecessor documents ASCE 31 and FEMA standards for decades as a tool to consistently review the various types of structures. ASCE 41 and 31 provide accepted criteria, material values, and analysis techniques as well as report format. The qualification information included cites selected examples of the application of and experience with these documents. The firm has evaluated and designed the retrofit for many existing buildings for supporting continued occupancy and reuse in both Life Safety and Immediate Occupancy categories. We developed ZFA's program to use ASCE 41 as a tool for building evaluations. The standards have been applied across multiple jurisdictions to determine effectiveness of original construction, to identify any structural deficiencies, to provide recommendations for retrofit and to develop cost estimates for remodel and retrofit construction. Our expertise with the ASCE 41 document has been beneficial to public and private projects of all sizes, and has assisted ZFA in developing our relationship with numerous agencies as a trusted partner. We have a strong understanding of the public process and have performed structural engineering for retrofits and new construction for local, regional, and state civic centers, fire and police stations, transit facilities, and more.

**Successfully Supporting the Bid Phase and Providing Construction Support Services.** ZFA views Construction Administration as a proactive phase, rather than a reactive or defensive one. ZFA works closely with the client, architect, and contractor during each phase of construction to ensure that the design intent is carried out. This means timely responses to requests for information and submittal reviews.

ZFA also realizes that no matter how well we execute the design portion of a project, we will ultimately be remembered for the construction process. To this end, ZFA is dedicated to supporting the project through the entire construction process. This



HAYWARD FIRE STATION | HAYWARD CA

## » EXPERIENCE

begins with allocating a sufficient portion of our fee to construction administration and leveraging our collaborative approach to form a team with the contractor. Our firm culture is shaped by our extensive Design-Build experience, which not only influences the way we approach design from a construction viewpoint, but also has given us a unique insider's perspective of construction administration services and the need for timely site visits and quick turn-around on RFIs, shop drawings, and submittals.

Our experience has shown us that the initial system selection is essential for ultimate project success and that the ideal structural solution may not always be the best total project solution. We have found that the additional time spent by principals and other senior staff up front leads to solutions where the structural system is well-coordinated and complementary to the project design intent. We realize that we will initially be measured on the timely delivery of creative, responsive, thoughtful, and on-budget solutions but will ultimately be remembered for how we finish. Our accuracy and reliable work are, in part, why we retain repeat clients for many years (some for decades) and why we are also often asked by clients to perform peer reviews on projects.

**Technology.** ZFA utilizes a wide array of software and technology to best suit project goals and budgets. We employ complex structural analysis programs where design of structural and foundation systems require a higher level of analysis. We use collaborative software to seamlessly work across offices, which allows us to access resources and expertise throughout the company as required for each project.

We use several methods to facilitate design and planning, but the most effective tool is our use of Building Information Modeling (BIM) that is used during design, pre-construction and construction to coordinate and resolve any interdisciplinary engineering system conflicts with trade subcontractors' design. Early BIM planning will help us to drive early decision making, design convergence and design quality control. The 3D process allows us to effectively communicate our design goals to all the project stakeholders in a clear concise manner. It will also help during construction to resolve complex sequencing thereby reducing schedule time and change orders and increasing field productivity and quality.

**Value Engineering.** During the design phase we continuously analyze building components and review materials to provide design options for reducing costs without compromising quality. All suggestions are tracked on a value engineering log as a summary of recommendations with detailed cost estimates for each. The log is used to track cost savings as well as schedule impacts resulting from changes. All options are reviewed with our client to determine inclusion in the project. Additionally, we continue to evaluate any potential value and schedule saving ideas throughout construction and will offer savings to the KFPD wherever ideas are realized.

**Quality Assurance.** ZFA is committed to delivering high-quality projects on schedule while controlling costs. We have a demonstrated history of preparing clear, concise, and accurate documents that result in lower construction bids and limited change orders during construction. We accomplish this by implementing a Quality Assurance (QA) program for each project with a dedicated senior staff member. Our QA process includes internal reviews at the beginning of each project and at specific milestones throughout the project with a focus on technical accuracy as well as constructability and cost efficiency.

» EXPERIENCE

ZFA Structural Engineers delivers excellence in structural engineering by providing sound structural solutions and state-of-the-art technical expertise to ensure our clients' structures will withstand the demands of the environment. The table below offers a snapshot of ZFA's qualifications and experience on fire station projects both existing and new.

Below we present a brief table of similar projects and scope to those outlined in the RFP.

PROJECT NAME	EXISTING CONSTRUCTION	NEW CONSTRUCTION	STRUCTURAL ENGINEER OF RECORD (SEOR)	STRUCTURAL ASSESSMENT	ALQUIST-PRIOLO FAULT TRACES ON SITE	ASCE 41 EVALUATION	RETROFIT	CONSTRUCTION DOCUMENTS	CONSTRUCTION ADMINISTRATION	ESSENTIAL SERVICE FACILITIES
Hayward Fire Stations No. 1-5	•		•	•		•	•	•	•	•
San Mateo Fire Station No. 23 Training Tower	•		•	•		•	•	•		•
Napa Headquarters Fire Station No. 1 Seismic Retrofit	•		•	•		•	•	•	•	•
San Ramon Fire Station No. 34	•	•	•				•	•	•	•
San Ramon Public Safety Building for the fire district and police department	•	•	•	•		•	•	•	•	•
San Bruno Fire Station No. 52	•			•	•			•	•	•
East Bay Region Park, Public Safety and Administrative Headquarters	•		•	•	•		•	•	•	•
Sonoma County Chanate Hospital Building #7 Evaluation	•		•	•	•	•				•
Fire Stations No. 2 and 3, Petaluma	•		•	•		•	•			•
Private Energy Client, Richmond, CA	•	•	•	•		•	•	•	•	•
El Sobrante Fire Station No. 69	•							•	•	•
Alameda Fire Station No. 5	•			•						•
Alameda Fire Stations No. 1 and 3	•			•						•
Palo Alto Fire Station No. 3		•	•					•	•	•
Napa Fire Station No. 5		•	•					•	•	•
Cloverdale Fire Protection District Headquarters Fire Station		•	•					•	•	•
Moraga-Orinda Fire Station No. 43		•	•	•		•		•	•	•
CAL FIRE Campuses Conceptual Design, Eight sites from Santa Cruz to Redding	•	•							•	

**Staff Resources, Scheduling and Budget.** ZFA will provide timely project delivery and give top priority to essential service projects. We understand that structural design services can often be driven by tight schedules and budgets, particularly when funded by public and grant sources. Several tools are used at ZFA to ensure that project schedules and budgets remain on track: schedule and comment logs, weekly meetings, and budget tracking.

For this project, we will identify critical path items and discuss any project constraints. Our key staff, Luke Wilson, Principal-in-Charge and Matt Frantz, Project Manager as well as other assigned project team will be committed to the project through completion, engaging with a proactive management approach and regularly utilize pre- design meetings to establish a design methodology early in the process; thus, helping to preempt end-of-design changes. The timely delivery of any project is an essential strategy for managing its' cost. However, when change orders arise during the construction phase requiring redesign, ZFA turns these around in a timely fashion, thus minimizing delays to construction schedule and increased costs, while maintaining a log of the changes, dates and cost associated with them. When required, we will work with KFPD staff to revise project goals and expectations to meet schedule and budget constraints. We understand that during the work, the KFPD may contract separately for certain consultants or may use qualified staff to assist in the design process and ZFA will work cooperatively with other design professionals on the project that the KFPD choose to contract with for it.

» RESUME



**LUKE WILSON, SE, LEED AP**  
**ASSOCIATE PRINCIPAL | PRINCIPAL-IN-CHARGE**

Luke Wilson has served in the role of structural engineer of record, project manager, and design engineer for a variety of public works projects that include new construction, modernizations, design-build projects, remodels, and seismic evaluations. He enjoys incorporating structural systems into mixed architectural use buildings, especially for essential service facilities. He excels at the required coordination, including the use of BIM (Building Information Modeling), between disciplines involved in public sector projects.

Luke is experienced in the requirements for the Essential Service Act of 1986 and is knowledgeable in NFPA 1221 and the State Fire Marshall codes, which are required for emergency operations and dispatch facilities. His experience provides significant value in developing structure concepts and providing value analysis for design, modification, rehabilitation and seismic retrofit of structures. Additionally, Luke is adept in the use of the California Building Code’s Existing Structures chapter, the International Existing Building Code, California Historic Building Code, and most relevantly ASCE 41. He has evaluated and retrofit many existing buildings for continued occupancy and reuse in both Life Safety and Immediate Occupancy categories.

Luke has assisted local governments in the safety evaluation of their buildings in the aftermath of the 2014 Napa Earthquake, plus led the firm’s response to the 2017 Sonoma County Firestorm by coordinating between Local Jurisdictions, other local structural firms, and homeowners.

**YEARS OF EXPERIENCE**

- 14 years with ZFA
- 14 years total

**EDUCATION**

- B.S., Architectural Engineering, 2005, California Polytechnic State University, San Luis Obispo

**PROFESSIONAL REGISTRATION**

- CA Structural Engineer 5933
- CA Civil Engineer 74941
- United States Green Building Council LEED AP
- State of California Department of Emergency Services Disaster Services Worker Safety Assessment Program ID #67415

**PROFESSIONAL MEMBERSHIPS**

- Structural Engineers Association of Northern California (SEAONC)
- Construction Specification Institute (CSI), Board Member

**RELEVANT PROJECT EXPERIENCE**

- |  |            |
|--|------------|
| ▪ DGS Cal Fire Santa Cruz Unit HQ Auto Shop (TO #124683) | Santa Cruz |
| ▪ San Ramon Fire Station 34 Remodel                      | San Ramon  |
| ▪ San Ramon Public Safety Facility Assess. & Renovation  | San Ramon  |
| ▪ Moraga-Orinda Fire Station No. 43                      | Orinda     |
| ▪ Brentwood Municipal Service Center, Bridging Documents | Brentwood  |
| ▪ West County Transportation Addition                    | Santa Rosa |
| ▪ West County Transit Authority, Parking Project         | Santa Rosa |
| ▪ Truckee Corporation yard, Phase 3                      | Truckee    |
| ▪ Vacaville Corporation Yard                             | Vacaville  |
| ▪ Historic Napa County Courthouse Repairs                | Napa       |
| ▪ California Highway Patrol Area Office No. 241          | Chico      |
| ▪ California Highway Patrol Area Office No. 266          | Tracy      |
| ▪ DGS Cal Fire Auto Shop                                 | Santa Cruz |
| ▪ Palo Alto Fire Station No. 3                           | Palo Alto  |
| ▪ San Mateo Fire Station No. 24                          | San Mateo  |
| ▪ Napa Fire Station No. 1 Seismic Evaluation & Retrofit  | Napa       |
| ▪ Santa Rosa Fire Station No. 5                          | Santa Rosa |
| ▪ Alameda Fire Station No. 5 Assess. & Feasibility Study | Alameda    |
| ▪ Healdsburg Community Development Center                | Healdsburg |
| ▪ Cloverdale Public Safety Facility                      | Cloverdale |
| ▪ Cloverdale Headquarters Fire Station Campus            | Cloverdale |

» RESUME



**MATT FRANTZ, SE**  
**ASSOCIATE PRINCIPAL | PROJECT MANAGER**

Matt Frantz has been providing professional structural engineering and project management services on a variety of projects, including public, civic, essential service facilities, higher education, healthcare, mixed-use, retail, and seismic retrofits with ZFA for over 10 years.

Matt has managed seismic projects for a large confidential energy client, which included seismic assessments for more than 70 buildings on four campuses. He has applied performance-based seismic analysis and design methodologies to numerous structures and is knowledgeable in the national standard for seismic rehabilitation of structures, ASCE 41.

Additionally, Matt has extensive experience with both the Office of Statewide Health Planning & Development (OSHPD) and the Division of the State Architect (DSA), including new construction, remodels, and seismic retrofits. Matt has also played a key role in the engineering of several pieces of public art.

Matt has contributed to many successful and complex projects in his tenure with ZFA, including a new recreation center at St. Mary's College that utilized Cast Connex proprietary braced frames, a Side Plate moment frame office building at Bluxome Street, and a multitude of other seismic evaluation projects.

**YEARS OF EXPERIENCE**

- 13 years with ZFA
- 16 years total

**EDUCATION**

- B.S., Architectural Engineering, 2005, California Polytechnic State University, San Luis Obispo

**PROFESSIONAL REGISTRATION**

- CA Structural Engineer 5919
- CA Civil Engineer 74846
- State of California Department of Emergency Services Disaster Services Worker Safety Assessment Program ID #76361

**PROFESSIONAL MEMBERSHIPS**

- Structural Engineers Association of Northern California (SEAONC)

**RELEVANT PROJECT EXPERIENCE**

- |   |                     |
|---|---------------------|
| ▪ Hayward Fire Station No. 6 & Fire Training Center   | Hayward             |
| ▪ Stanford University Public Safety Building  | Palo Alto           |
| ▪ Pacific Gas & Electric (PG&E), Various Locations  | Northern California |
| ▪ Chevron Richmond Lubricants Plant (RLP), Voluntary Seismic Retrofit                       | Richmond            |
| ▪ Half Moon Bay Fire Training Tower   | Half Moon Bay       |
| ▪ Mt. Umunhum Radar Tower Evaluation & Retrofit, Midpeninsula Regional Open Space District  | San Mateo Co.       |
| ▪ Structure Stabilization Projects, Midpeninsula Regional Open Space District               | San Mateo Co.       |
| ▪ John E. Moss Federal Building Tenant Improvements Executive office for Immigration Review | Sacramento          |
| ▪ Fire Station No. 23 Tower Eval. & Fire Escape Anchorage                                   | San Mateo           |
| ▪ US Marshals Service Detention Space Refresh   | San Francisco       |
| ▪ East Palo Alto Government Center  | Palo Alto           |
| ▪ Contra Costa Transfer Station Addition  | Martinez            |
| ▪ San Bruno Senior Center   | San Bruno           |
| ▪ City of San Mateo Parking Garage Repairs Projects   | San Mateo           |
| ▪ Private Energy Client Seismic Evaluations & Fall Protection Systems                       | Various             |
| ▪ Hyde Street – Soft Story Seismic Retrofit   | San Francisco       |
| ▪ Coal Sheds Adaptive Reuse, Mare Island  | Vallejo             |
| ▪ Bio Marin   | Novato              |
| ▪ San Bruno Senior Center   | San Bruno           |
| ▪ USF Recycling Center Facility   | San Francisco       |
| ▪ On-Call Structural Engineering Services   | San Mateo           |

## PROJECT APPROACH

The proposed project consists of the seismic evaluation and retrofit of an existing 5,700 square-foot two-story building, originally constructed in 1969. The original use of the building was a police and fire station, and it is currently being shared by the Kensington Fire Protection District (KFPD), and the Kensington Police Protection Community Services District (KPPCSD). Structural and operational deficiencies exist, and in 2016 a Master Planning process was commissioned to investigate various options for mitigation of the deficiencies. The KFPD Board ultimately decided to move forward with a Fire Department-only plan for the building, and it is desired to address both operational and structural deficiencies concurrently.

The building sits on a sloping site, with the lower level built into the hillside. The building stands approximately 22 feet tall and is predominantly wood-framed, with some steel framing at the second floor. The first floor appears to be a slab-on grade, with a retaining wall at the rear of the building. There have been several previous remodels and partial structural upgrades to the building, but a comprehensive seismic upgrade has not yet been completed. Several geotechnical investigations have also been performed for the site over the years, identifying earthquake faults in near proximity to the site, including a potential fault line within 50 feet of the property. This proximity to a fault line places the site within the Alquist-Priolo Special Studies Zone, as identified in a previous investigation, which limits the cost of the addition or alteration to within 50% of the value of the structure. Additionally, a previous study, performed in January 2016, notes that several components of the seismic force resisting system are likely deficient, and ultimately recommended a full evaluation of the building, or complete replacement. It is possible that a complete replacement would not be permitted due to the Alquist-Priolo Special Studies Zoning, which is intended to prevent the construction of buildings used for human occupancy on the surface of active faults. Following the January 2016 study, a full seismic evaluation of the building was performed in July 2016. This ASCE 41-13 Tier 2 evaluation identified several structural deficiencies, and conceptual mitigation measures were recommended.

To address the concerns noted above, the previous seismic evaluation will first be reviewed and validated, then compared to the current ASCE 41-17 *Seismic Evaluation and Retrofit of Existing Buildings* standard to confirm if any additional deficiencies are present. Based on the results of this review, a seismic retrofit strategy will then be developed and coordinated with the concurrent architectural remodel plan.

The conceptual remodel plans provided in the November 2019 show extensive modifications to the layout of the interior walls, many of which are likely to be bearing walls. Other modifications proposed in the renovation design include installation of a new elevator, enclosure of the existing exterior second floor deck, adjustment to the location of the step in second floor framing elevation, addition of a lift at the step in second floor elevation, replacement of the stair to be ADA compliant, and modifications to the exterior window openings. These modifications are anticipated to require new framing at the upper and lower levels to re-support the existing framing, along with new foundations at new posts and bearing walls. The structural modifications required for the renovation will be coordinated with and incorporated into the seismic retrofit design.

Our seismic strengthening approach is to work with the building's overall geometry and existing constraints (utilities, partitions, finishes, etc), that are present and to design the strengthening elements around these items whenever possible. We also seek to work in locations where the risk of unforeseen conditions is the lowest. We believe that this philosophy and our proven approach, while requiring more site visits and engineering iterations, will result in construction cost savings that exceed the additional engineering effort and create an optimized final work product. We are optimistic that we can develop an efficient strengthening solution within the constraints this building affords. The proposed retrofit strategy will be shared and discussed with the KFPD at intermediate design milestones to ensure the concerns of all stakeholders are addressed as much as possible.

**SCOPE OF SERVICES**

Our overarching approach is to provide full-service engineering with a focus on strong collaboration and coordination with all team members. The following lists the scope of services that will be provided for each phase of this project.

**Task 1: Assessment and Schematic Design (SD)**

1. Attend site visits as required to observe and survey the existing structure and identify any potential conflicts.
2. Meet with the building users to discuss the planned operations within and around the building to better understand their needs.
3. Attend virtual design meetings as required to validate scope and systems.
4. Review and validate the previous Tier 1 and Tier 2 Seismic Evaluation of the structure, performed in accordance with ASCE 41-13, and compare to the current ASCE 41-17 standard to determine if any additional deficiencies are present.
5. Develop a seismic retrofit strategy that meets the current Building Code.
6. Prepare Schematic Drawings, via PDF markups on existing drawings, that are developed in sufficient detail to convey the structural design intent for discussion with KFPD and Architect.
7. Discuss the proposed retrofit strategy with the Architect and KFPD, and modify it as needed to meet programming and operational requirements for the building.
8. Provide a structural narrative outlining the project structural design criteria, analysis procedures, structural systems selection process, and structural material properties.

**Task 2: Design Development (DD)**

1. Attend virtual design meetings as required to coordinate design work.
2. Develop primary structural elements in the Revit BIM model to approximately LOD 200 in accordance with AIA 202-08. This model will be coordinated at regular intervals with Revit design models provided by other design consultants on the team.
3. Prepare Design Development Drawings from the Revit Model including foundation and framing plans with member sizing as well as general notes and typical details. Submit drawings to Architect and District for review at 50% and 100% milestones.

**Task 3: Construction Documents (CD)**

1. Attend virtual design meetings as required to coordinate design work.
2. Incorporate review comments from DD submittal as required.
3. Develop primary structural elements in the Revit BIM model to LOD 300 in accordance with AIA 202-08. This model will be coordinated at regular intervals with Revit design models provided by other design consultants on the team.
4. Prepare Construction Drawings with fully developed framing plans and details that are coordinated with architecture, mechanical, and electrical designs. Submit drawings to the Architect and District at 50% and 100% milestones.
5. Prepare finalized specifications that are coordinated with the design.
6. Provide structural calculations for permit submittal.
7. Provide final review, markup of details by others, and supplemental calculations to assist with structural work associated with bracing and anchorage of non-structural architectural components.
8. Prepare forms for structural testing and inspection for submittal.

**Task 4: Permit Approval**

1. Respond to comments made by the Authority Having Jurisdiction (AHJ). Issue revised calculations and drawings as required to address comments and obtain required permits.
2. Meet with the AHJ to assist with expediting the review of the building permit application as required.

**Task 5: Bidding Documents**

1. Prepare responses to questions from prospective bidders, as well as clarifications for Addenda to the Bidding Documents.

**Task 6: Construction Administration (CA)**

1. Attend kick-off meeting at project site.
2. Attend virtual construction design meetings as deemed required by the KFPD.
3. Perform up to five site visits to observe foundations, framing, and final structure, as required to meet the code minimum structural observation requirements.
4. Prepare Structural Observation Reports for each site visit made.
5. Submittal Review
  - a. Structural items designed by ZFA.
  - b. Deferred approval submittals for items designed by others to confirm loads imposed on structural members.
  - c. We will review each submittal no more than two times. If additional reviews are required, there will be an additional service request prior to commencement of review.
  - d. We will endeavor to turn around reviews in one week.
6. Respond to requests for information (RFIs)
  - a. Clarification or coordination of structural plans and details.
  - b. Additional services will be required to review substitutions, revisions to approved structural materials and details, and to develop field fixes.
  - c. We will endeavor to turn around responses within two days.
7. Review of testing and inspection reports provided by independent agency hired by the Owner.
8. Review and comment on change orders as deemed necessary by the KFPD.
9. Perform final walk-through and assist in developing punch list.
10. Work through change orders and related discussions.
11. Provide as-built Revit model and structural drawings developed from the model. The model will be updated as the project is under construction with any revisions to structural design. Minor field fixes and RFI information will not be included in these documents.
12. Provide final closeout letter stating that the observed completed construction is in accordance with the structural design intent.

**Project Assumptions**

General project assumptions are as follows:

1. All structural design and structural related services will be in accordance with the latest edition of the 2019 California Building Code.
2. Existing building assessments will be in accordance with ASCE 41-17 Tier 1 and Tier 2 analysis at an immediate occupancy and life-safety dual performance level.
3. All drawings will be produced with Autodesk Revit 2020.

**Project Schedule**

ZFA is able to meet the schedule shown for all design phases.

Phase	Timeframe from Notice-to-Proceed
Design Phase	9 months (assumed)
Construction Phase	15 months (assumed)

**FEE PROPOSAL**

Our proposed Not-to-Exceed fee is based on our project understanding, RFP 2021-04, research, and our detailed scope of work provide previously in this document. We have attempted to anticipate the services required to successfully complete this project. Should you required further explanation or details about our approach or fee, please do not hesitate to inquire as the proposed fees are subject to change.

Phase	Fee
Task 1: Assessment and Schematic Design	\$8,430
Task 2: Design Development	\$12,240
Task 3: Construction Documents	\$23,580
Task 4: Permit Approval	\$4,520
Task 5: Bidding Documents	\$1,120
Task 6: Construction Administration	\$12,500
Reimbursables*	\$600
<b>Total</b>	<b>\$62,990</b>

\* Expenses other than labor charges that are directly attributed to our professional services are invoiced at our cost plus 20 percent. Reimbursable expenses typically include: 1) extra prints and reproductions, 2) special delivery (e.g. overnight) costs, 3) sub-consultants hired for the project by ZFA Structural Engineers with Client’s authorization and 4) any and all work, fees, expenses and costs that are not specifically listed and identified in the Agreement, Project Approach, and Scope of Services.

**EXCLUSIONS**

This agreement does not include the following:

1. Design of temporary support systems, shoring, bracing, or construction means and methods items.
2. Major changes in the scope or design of the project as initiated by the KFPD or Architect.
3. Any additional work not included within the Scope of Services.

**HAYWARD FIRE STATIONS NO. 1-5 EVALUATION AND RETROFIT**  
Hayward | California



**YEAR COMPLETED**

2018

**CONSTRUCTION COST**

\$8 Million

**SQUARE-FOOTAGE**

20,000 sf

**PROJECT RELEVANCE**

- Seismic Analysis and Evaluations using ASCE 41-13
- Cost Estimating
- Risk Prioritization
- Designed to meet requirements of 2013 CBC

**CLIENT**

Michael Ross, Principal  
Ross Drulis Cusenbery  
Architecture  
mross@rdcarchitecture.com  
707.996.8448

This project was completed in two phases. During the first phase of the project ZFA provided a seismic assessment of six stations using ASCE 41-13. Schematic retrofits to correct identified deficiencies were developed. These recommendations were presented in report format and were utilized to establish modernization priorities and cost estimates for implementation. Retrofit as well as replacement schemes were also developed for the various structures at the department's training facility.

The overall goal of the second phase was the completion of non-structural modernizations and targeted voluntary seismic strengthening of five of the existing Hayward fire stations. The modernizations were primarily non-structural in nature and include items such as appliance/ MEP equipment replacement, restroom reconfiguration, replacement of existing roll up apparatus bay doors with overhead sectional and bi-fold doors, evaluation of small portion of existing upper roof for the support of a photovoltaic system and miscellaneous non-structural partition modifications which included localized reframing of existing structure were required to enable the renovations. All new non-structural work was designed in accordance with the requirements of 2013 CBC.

The voluntary seismic strengthening included correction of identified structural deficiencies identified in previous phase of project, designed to provide a minimum structural performance level when subjected to earthquake levels as defined per ASCE 41-13. Voluntary seismic strengthening included addition of shotcrete walls, plywood panel shear walls as well as strengthening of existing (pre-Northridge) steel moment frames to address identified deficiencies as well as supplement lateral capacity and limit drift demands at walls supporting apparatus bays. The design of all voluntary seismic strengthening will be based on demands from the ASCE 41-13 loading assumed above. Supporting foundation elements were incorporated for all new lateral force resisting elements introduced into the existing structure.

## NAPA FIRE STATION NO. 1 EVALUATION AND RETROFIT

Napa | California



### YEAR COMPLETED

2014

### CONSTRUCTION COST

\$2 Million

### SQUARE-FOOTAGE

8,000 sf

### PROJECT RELEVANCE

- Seismic Analysis and Evaluations using ASCE 31
- Retrofit
- Detailed Assessment Report

### CLIENT

Michael Berger  
City of Napa  
707.257.9520

An ASCE 31 seismic evaluation and retrofit was performed for this 8,000 square foot fire station. The evaluation provided the City of Napa with a detailed assessment of the building. The station is an immediate occupancy risk category IV structure.

The report was used to estimate retrofit construction costs and help guide the City to making informed decisions regarding the desired design performance level. The seismic retrofit was completed and involved concrete masonry unit (CMU) wall connections, concrete diaphragm connections, and 2-bay steel moment frame reinforcement.

The retrofit was designed to facilitate all work on the low roof portions to be done from above which allowed the day to day operations of the headquarters office to continue with minimum interruptions. In addition, the work in the four-bay apparatus bay was sequenced to allow two bays to remain operational through the construction process.

**SAN MATEO FIRE STATION NO. 23 TRAINING TOWER EVALUATION AND RETROFIT**  
San Mateo | California



**YEAR COMPLETED**  
2021

**CONSTRUCTION COST**  
N/A

**SQUARE-FOOTAGE**  
N/A

**PROJECT RELEVANCE**  
▪ Assessment of existing conditions using ASCE 41

**CLIENT**  
Steve Wu, Project Manager  
City of San Mateo  
swu@cityofsanmateo.org  
650.823.8331

The City of San Mateo contracted with ZFA to perform a voluntary structural evaluation of an existing four-story tower. The tower was originally used to hang fire hose for drying, but has been converted over time to be used as a training facility. A survey and seismic assessment was performed for the tower using ASCE 41, with the results documented in a comprehensive assessment report for discussion with City. The assessment ultimately led to strengthening and repairs for the existing fire escape attached to the north exterior face of the tower.

The voluntary retrofit targeted only the most critical items, which reduced the overall construction cost and shortened the construction schedule.

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## References

» REFERENCES

### STEVE WU

City of San Mateo Public Works Department  
Project Manager  
(650) 823-8331  
swu@cityofsanmateo.org

Project: ZFA has worked on multiple projects for the City of San Mateo, including structural assessments and evaluations, repair and maintenance projects, and smaller new construction projects.



### EDWIN GARCIA

City of San Jose Public Works  
Interim Division Manager  
(408) 975-7247  
Edwin.garcia@sanjoseca.gov

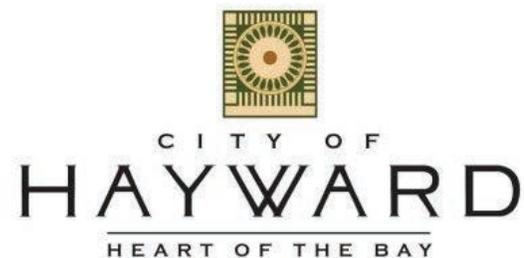
Project: ZFA has worked on multiple projects for the City of San Jose under an Architectural Master Services Agreement. Services include structural calculations and drawings, assistance with obtaining building permits, and construction administration services.



### DAVE HUNG

City of Hayward  
Associate Civil Engineer  
(510) 583-4752  
Dave.Hung@hayward-ca.gov

**Project:** ZFA worked closely with the City of Hayward on the on the new Hayward Fire Station No. 6 and Fire Training Center. Services included several DSA approval strategy meetings and conceptual design for the new campus.



### MATT RASCHKE

City of Palo Alto  
Senior Engineer  
(650) 329-2171  
matt.raschke@cityofpaloalto.org

Project: ZFA worked closely with the City of Palo Alto on the new Palo Alto Fire Station No. 3 and ZFA's team worked directly with and through the design team for Mr. Raschke on the new 6,397 square-foot station that earned a LEED Gold certification.

