



Janet Wilmoth
Special Project Director

Firehouse is pleased to present the sixth annual showcase of fire and emergency services facilities. Fifty-four entries, in eight categories, were submitted by 44 architecture firms from across the United States and Canada.

The purpose of the Station Design Awards is to educate *Firehouse* readers on trends and innovations in new public safety facilities across North America. These emergency response and training facilities also serve to offer the work of specialized architectural firms. Keep in mind, with a national collection of facilities, prices vary greatly depending on the region, styles vary depending on the locale and size by budget, department responsibilities and the community served.

As each portfolio was received, I knew this year would be more difficult for the judges than last year and I was right. It was obvious that fire chiefs, project managers and municipal leaders invested the time and effort at conferences to learn how to build more efficient and effective fire stations for their departments. I believe their confidence in working with architects and construction professionals is evident in the quality of the entries submitted to the Station Design Awards this year. Take a look at the stations in this section and I think you will agree.

Our judges this year included one judge from last year; four architects, a fire chief who is also an architect, and a fire chief experienced in new and renovated stations. No judge had an entry in the award program. Instructions were purposely kept simple: based on their experience and knowledge, review each entry by category and bring their top three choices in each category to the judging. In some categories, judges were unanimous in a Gold winner, but for others, some intense discussions were held, especially when the finalists were wide-ranging. It was a real learning experience to hear the pros and cons on each of the finalists discussed by a determined group of judges.

One request the judges made during the judging process was to reinstate the Training Facilities category. Two large training facilities entered in the Mixed-Use category were significantly different from other entries. We agreed and will also reinstate the Training Facility category for next year.

With the introduction of the Hot Zone design just four years ago, the concept was included or adapted in many of the fire station entries. Judges agreed research and data on firefighters' high cancer rates tied to exposure to carcinogens and coupled with apparatus manufacturers' clean cab efforts have supported the issue of how to isolate contamination in the apparatus bays and in the living areas. Floor plans of entries were also reviewed for airlocks or transition areas between apparatus bays and living areas to prevent cross-contamination. We expect to see an increase in two-door transitional areas.

Roaring Fork Fire Rescue Station 45, Snowmass Village, CO, was commended by the judges for addressing the issue of recruiting personnel in an expensive housing market. The fire department's floor plan addressed the issue by including six resident studios with ample storage and separate exterior entries. Judges suggested the department deserves an "Innovation" award by dealing with firefighters who cannot afford to live in the village. In past years, we've seen a couple areas on the East Coast that have provided affordable housing for first responders located above the fire station. This is another trend we'll likely see more in future entries.

There were discussions about natural lighting in the stations. Many entries featured sleeping rooms along exterior walls with windows, however, day rooms located on the interior were without windows. In a 2019 Station Design Conference presentation "Immersive Design for Reduction of PTSD and Suicide," Paul Erickson, FAIA, and Jennifer Cramer, M.E.D, LPC, suggested how "Biophilic design strategies utilize natural materials and daylight to enhance the sense of orientation, security and safety for firefighters and emergency responders." It could be a challenge to include more windows and natural light, but worth considering.

Every entry is a "winner" for the department, the personnel and the community served. You also have a valuable resource of trends and ideas to help with your next fire station and excellent examples of the work of architects who specialize in designing fire and public safety facilities.

Plan to attend the 2020 Station Design Conference, May 12-14, in Rosemont, IL, and begin or continue your journey to your next station!

—Janet Wilmoth, Special Project Director

Save the date



May 12-14, 2020

Rosemont, IL

FHStationDesign.com

JUDGES



Matt Bickel, AIA, LEED AP

As an architect and partner, Bickel has spent his entire 18-year career at Wold Architects & Engineers working with municipal and government clients across the Midwest to plan, design and implement their public safety facilities—both new construction and renovations. He is proud of relationships that are forged as Wold partners with communities to successfully translate their unique goals and realize their shared facilities visions.



Mark Bushhouse, AIA, LEED AP

Bushhouse joined Williams Architects in 1987 and is a licensed architect in the states of Florida, Illinois, Iowa, Kansas, Michigan, Missouri, New York, Ohio and Wisconsin. He has a Bachelor of Architecture/Design from the University of Illinois at Chicago and is an LEED® Accredited Professional. In 2007, Bushhouse was named president of the firm. In addition to his responsibilities as president, he leads the firm's Municipal Sector, assisting communities in the planning and design of their facilities with his 25+ years of fire station insight, knowledge and expertise.



Ralph DeLuca, Jr., Fire Chief

DeLuca is a 30-year veteran of the Oakbrook Terrace, IL, Fire Protection District where he presently holds the rank of fire chief. During his tenure with the district, DeLuca attained a Bachelor of Architecture degree from the University of Illinois and is presently licensed in multiple states. He also is an instructor for technical rescue and structural collapse response within the state. Presently, DeLuca holds a position on IL TF-1 (urban search and rescue) as a structures specialist.



Johnny Fong, AIA, NCARB

Fong studied architecture at the Berkeley campus of the University of California and earned his bachelor's degree in 1979. In 1995, he became a full-time firefighter for the City of Reno, NV, Fire Department. Currently, he is fire equipment operator/engineer of Engine 2, one of the busiest engine companies in the city. Urged by company and chief officers, Fong started FireHouse Designs in the late 1990s, with a goal to successfully blend the needs of the architecture and fire service disciplines, resulting in a fire station design satisfying to both the architect and fire service personnel. He has frequently judged fire stations since 2002 for *Fire Chief* and *Firehouse* magazines.



Joe Leone, Fire Chief

Leone is a 29-year veteran of the Addison, IL Fire Protection District. He started his career with Addison as a firefighter/paramedic and during the last 29 years was promoted through the ranks to his current level as chief. He has a master's degree from Southern Illinois University in homeland security and fire service administration, is an approved instructor for the National Fire Academy for incident command and serves as a professor for Southern Illinois University, where he instructs on labor relations and government aspects of public safety. During his time with Addison, Leone has experience with construction of a new station and renovations of existing fire stations. He is active at the local and national levels, advancing fire and EMS concerns.



James B. Schmidt, EFO

Schmidt, a retired career fire chief, is the senior emergency services specialist with Wendel's Five Bugles Design, Eau Claire, WI. This year marks his 40th year in fire and emergency medical services and with experience after retirement as an interim chief and member of both volunteer and combination fire/EMS departments. He has experience on the owner's side of four projects and as a design professional with more than 30 station projects to his credit. Schmidt's educational experience includes an associate degree from Fox Valley Technical College, business administration program from Lakeland College, and completion of the National Fire Academy's Executive Fire Officer Program.



Dean Sparaco

Sparaco is the director of Government, Multi-Family and Senior Living for CR architecture + design, Denver, CO. He is responsible for client interaction, company culture and all things to do with project delivery. Sparaco has a master's degree in architecture from Montana State University and studied in The Netherlands and Germany. He has a passion for sustainable design and construction in the Rocky Mountains that is reflected in the body of work that he has carefully crafted over the last 25 years. Sparaco has studied under, worked with and learned from some world-renowned planners, authors and architects.

2019 STATION DESIGN ARCHITECTURE FIRMS

Allen & Hoshall, Inc.

Architects Design Group

BKV Group

Blalock and Partners

Bray Architects

Brinkley Sargent Wiginton Architects

Brown Reynolds Watford

Architects, Inc.

Brunton Architects & Engineers

Charles Cunniffe Architects

CJW Architecture

Context Architecture

Dewberry

DGBK Architects/S2

DLZ

FGM Architects

George, Miles & Buhr, LLC

H2M Architects + Engineers

HCMA Architecture + Design

Hughes Group Architects

Jeff Katz Architecture

Keller, Inc

Kirkpatrick Architecture

KZF Design

LeMay Erickson Willcox Architects

Mackenzie

Manns Woodward Studios

Martinez Architects

Menlo Park Fire Protection District

(CJW Architecture)

Miller Boskus Lack Architects, P.A.

Mitchell Associates Architects, PLLC

Mull & Weithman Architects

OZ Architecture

Pacheco Ross Architects

Perlman Architects of Arizona, Inc.

Resin Architecture

S2 Architecture

Slattery Tackett Architects

Stewart-Cooper-Newell Architects

Sweet Sparkman Architects

TCA Architects

Thomas Roberts Architect

TPH Architects

WBRC Architects Engineers

WLC Architects, Inc.



Surrounded by the world-class Aspen/Snowmass ski resort, the Roaring Fork Fire Rescue Station 45 was designed to sustainably address firefighter health, compliment the surrounding architectural vernacular, and provide affordable housing. The site drops a full story from the main road, resulting in a two-story facility with apparatus bays on the upper level for quick response times, and community and housing access from the shared lower parking lot.

The health, safety and comfort of personnel was of paramount importance. Interior spaces are separated by an air-tight vestibule, with walk-off carpet to capture contaminants. The bays are



negatively pressurized to prevent exhaust and carbon monoxide from entering the other areas of the building and contain a vehicle exhaust capture system in addi-

tion to a ventilation system connected to both CO and NO2 sensors. A decontamination room and drench shower with eye wash is located directly off the bays.

Official Project Name: Roaring Fork Fire Rescue Station 45
Project City/State: Snowmass Village, CO
Date Completed: October 1, 2018
Fire Chief: Scott Thompson
Project Area (sq. ft.): 33,771
Total Cost: \$14,839,000
Cost Per Square Foot: \$482
Architect/Firm Name: Charles Cunniffe Architects
Website: cunniffe.com
Design Team: Charles Cunniffe Architects: Charles Cunniffe, FAIA, Principal; Grant Bankston, Job Captain; Scott Smith, Senior Project Architect; Ryan Hoffner, Senior Project Architect



Roaring Fork Fire Rescue Station 45

SNOWMASS VILLAGE, CO



Operational functions are secured from the public areas through a series of keypad locks.

Six resident studios with ample storage and separate exterior entries assists in the recruitment of personnel in an expensive housing market. Seven private dorms, with alert-lighting for eye adjustment during nighttime calls, are secured and adjacent to the day room with an outdoor patio, gym and yoga/large training space with bike and ski storage; reinforcing the station's focus on well-being. A solar thermal system offsets the

hot water demand, a 17.2 kW PV system offsets the electrical usage and ERV's capture heat while providing required ventilation. Extensive daylighting reduces the use of artificial lighting, and LED lights with daylight and motion sensors minimizes energy usage. Natural ventilation and ceiling fans replace mechanical air conditioning. Recycled materials, including salvaged local beetle killed pine, were used for wall and ceiling treatment, in the public spaces, as a nod to the local context.





Naples Fire Station No. 1 is a 22,600-square-foot two-story station housing city-provided fire response, as well as county-provided EMS rescue response. It includes fire department administration, Station No. 1, EMS rescue response, emergency operations center managed by the fire department, three apparatus bays and associated apparatus support spaces, battalion chief office, bunk room, and locker room. General facility functions such as kitchen, dining, report writing office, physical agility space, dormitories, restrooms and showers, and equipment/utility support spaces are also included. The facility is



designed to promote the “family unit” by creating an open shared space in the kitchen, dining and day room.

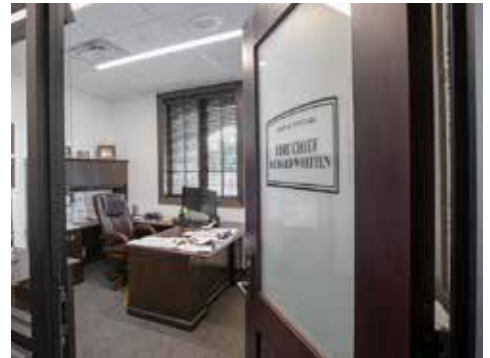
After analyzing several sites, it was determined the best option would be to utilize the existing station site, as land in this area is at a premium. The site is located in a predominantly residential neighborhood, but adjacent to city hall, providing access to other municipal services. During design, our team worked with the city to identify and plan for relo-

cating operations into temporary, off-site structures close enough to maintain their ISO rating.

This building is considered an essential facility, risk category 4, according to the Florida Building Code. The building structure includes a reinforced concrete slab on grade, elevated to the FEMA required 10-foot elevation for the first-floor level of the building, reinforced masonry walls with stone veneer, structural steel joist framing and metal deck with rigid insulation, and a single-ply membrane roofing system. The glazing systems include low “E” glazing meeting level E missile impact in either an ICC 500-tested curtainwall system or a tested storefront system. The EOC was designed and built to meet ICC 500 requirements. Systems include mechanical, electrical, plumbing, fire protection, security access control, audio/visual, alarm notification and communications systems.

Official Project Name: Naples Fire Station No. 1 & Fire Administration
Project City/State: Naples, FL
Date Completed: June 1, 2019
Fire Chief: Pete DiMara
Project Area (sq. ft.): 22,600
Total Cost: \$8,594,024
Cost Per Square Foot: \$380
Architect/Firm Name: Architects Design Group
Website: adgusa.org
Design Team: Architects Design Group: Susan Gantt, AIA, LEED AP, Architect of Record; Sami Gerwick, Project Manager; Mechanical/Plumbing/FP Engineer: Lawrin Ellis, PE, TLC Engineering; Electrical Engineer: Scott Lain, PE, Matern Engineering; Structural Engineer: Marcia Alvarado, PE, TRC Engineering; Civil Engineer: Peter VanBuskirk, PE, Kimley-Horn.





Located on one of the most prominent corners in the town, the new Westlake Fire-EMS Station No. 1 was conceived as an iconic image to establish the standard for all new construction of commercial and municipal projects to follow. Informed by the design of the fire station, the Town of Westlake has codified its own unique style, inspired by traditional Old World Catalonian architecture that features clay tile roofs, rubble stone masonry facades, and cedar accents. The project is comprised of two buildings, the fire station and administration, joined by a covered breezeway that serves both as the fire station dining patio and a break out space for the fire training.

The program includes four pull-through apparatus bays, accommodating for six career crew plus a captain, and living quarters for additional volunteer staff. The administration building provides offices for the fire chief, fire marshal and

administrative assistant, and includes a hardened enclosure that houses a training room and Emergency Operation Center. The administration break area doubles as support spaces for training, dining and public events, lined by stone arcades that are carried through from the building exterior.



Access to the administration building carries pedestrians across two stone bridges spanning the bioswale, which used a combination of river cobble and vegetation to filter stormwater run-off as it returns to the groundwater system. The placement of the buildings on the site enhances the natural topography and anchors the building as an emblem of civic identity that emphasizes accessibility to the town's citizens.



Official Project Name: Westlake Fire-EMS Station No. 1

Project City/State: Westlake, TX

Date Completed: March 4, 2019

Fire Chief: Richard Whitten

Project Area (sq. ft.): 17,834

Total Cost: \$9,637,000

Cost Per Square Foot: \$540

Architect/Firm Name: Brown Reynolds
 Watford Architects

Website: brwarch.com

Design Team: Gary DeVries, Principal-in-Charge; Stephen Hilt, Project Manager; Carol Kesler, Project Architect; Chris Sano, Project Designer; Garrett Barker and Sonya Shah, Project Coordinator





Crowned by the Richmond Fire-Rescue logo debossed into the cast-in-place concrete, the hall's hose tower at once designates the function of this public safety facility and stands as a beacon for the city's civic precinct. The massing and material expression of Richmond Fire Hall No.1 Brighthouse reflect its dual role as a four-bay facility with dormitory quarters for 14 firefighters, as well as the administrative headquarters for all Richmond Fire-Rescue operations.

The hose tower serves the traditional function of drying hoses, but is also designed as a valuable training infrastructure, offering firefighters an array of typical building conditions for practice exercises—balcony with sliding door, bedroom window, and stairs. Additionally, an expansive patio off Level

3 provides another area for ladder- and ground-based training operations.

In the apparatus bay, 16-foot tall bifold doors were specified on the exit side of the drive-through bays for maximum safety performance, offering drivers an unmistakably clear response path out of the hall and into the flow of traffic (some drivers have been known to try exiting the bay while conventional roll-up doors are still in the process of being raised, inadvertently colliding with the doors, causing damage and a delay in response time). The new fire poles were rendered in brass for a symbolic continuity with the pole in the original hall.

Internal organization of the facility makes turnout time paramount—layout of dormitory rooms and firefighter support spaces are arranged for optimum emergency response, and for visual access to the apparatus bay. Sleeping quarters are arranged around a core of washrooms and feature one sliding pole at each side. Firefighters emerging from their beds and into the corridor follow clear and direct paths to these points of descent, aided by floor-to-ceiling windows at hallway ends that offer clear views to the apparatus bay below.



Official Project Name: Richmond Brighthouse Fire Hall No. 1
Project City/State: Vancouver, BC, Canada
Date Completed: July 16, 2018
Fire Chief: Tim Wilkinson
Project Area (sq. ft.): 25,240
Total Cost: \$18,295,000
Cost Per Square Foot: \$724.84
Architect/Firm Name: HCMA Architecture + Design
Website: hcma.ca
Design Team: Darryl Condon, Managing Principal; Jay Lin, Associate, HCMA Architecture + Design; Steve DiPasquale, Architect, HCMA Architecture + Design



Official Project Name: Channelview Fire Station 3
Project City/State: Channelview, TX
Date Completed: November 1, 2017
Fire Chief: Ryan Thistle
Project Area (sq. ft.): 22,600
Total Cost: \$5,900,000
Cost Per Square Foot: \$261
Architect/Firm Name: Slattery Tackett Architects
Website: slatterytackett.com
Design Team: Slattery Tackett Architects: Programming, Planning and Architecture; Structural Consultant: Pinnacle Structural Engineers; MEP Consultant: T&D Engineers; Civil Consultant: Terra Associates; Construction Manager: Durotech, Inc.

The Channelview Fire Department is a proud institution that has operated continuously since 1949. In its 70-year history, the department has developed a strong commitment to care for, protect and serve their community. In keeping with this commitment, their new four-bay station is designed to meet the growing demand for fire and EMS ser-

vices, to provide a safe, comfortable and functional environment for department staff and administration, and to be accessible for members of the Channelview community.

Living quarters flank one side of the 75-foot deep apparatus bays, and are planned for direct access to apparatus from both common areas and dorms. The open concept kitchen, dining and day room areas promote the social interaction of crew members, with comfortable private dorm rooms providing the necessary quiet spaces. Natural lighting and high ceilings create an energetic exercise room, and the watch room provides a convenient workspace with wide-angle view of the apparatus bay.

Architectural treatment of the station's exterior recalls traditional design elements, focusing on the administration entrance. Administrative and public functions are separated from living quarters by the apparatus, respecting firefighter's privacy and the vastly differ-

ent program requirements. In addition to administrative offices and support spaces, a large multi-purpose room is available for classroom training and community meetings. Finish materials throughout the facility were chosen for their durability and ease of maintenance.

A unique feature of the station is a fully restored 1952 Mack pumper, the first new truck purchased by the Channelview Volunteer Fire Department. An important design requirement was to create a working garage for this truck which also beautifully displays this small piece of the community's history. Community members can see this truck when visiting the station and be reminded of the fire department's long history of serving the Channelview community.





Official Project Name: Del City Central Fire Station
Project City/State: Del City, OK
Date Completed: April 16, 2018
Fire Chief: Jim Hock
Project Area (sq. ft.) 17,412
Total Cost: \$5,034,472
Cost Per Square Foot: \$289
Architect/Firm Name: Kirkpatrick Architecture Studio
Website: <http://www.k-a-studio.com>
Design Team: Kirkpatrick Architecture
 David M. Robinson, AIA LEED AP BD+C,
 Project Architect; Caitlin Sanborn
 McGehee, AIA; Trong Nguyen, JGVE, Inc.;
 Don Vick, P.E., CEC; Structural: Brandon
 McBee, P.E.; MEP: Ezra Zoschke, P.E.

The City of Del City’s Fire Station No. 1 reclaims the land that had housed its first fire station in the early 1950s. Before engaging the design team, the city had bought the retail space and a house adjacent to the “fire station turned city hall turned police station”. Fitting the original 21,000 square foot program proved impossible on the triangular corner lot. Working with the owner, the design team reduced square footage while providing site plans showing possibilities if different adjacent lots were obtained. In the end, and over 15 schemes later, the city acquired an additional lot and closed the street in front of the station. The resulting 17,412 square foot central fire station houses fire administration, emergency operations center and a single engine company.

With only two stations, keeping crews in district is crucial. To enhance crew preparedness while at the station, training props were incorporated into

the mezzanine, stair tower, apparatus bay roof and stair tower roof. Further, accommodations were made for video-based training in the EOC.



Similarly, 85-foot apparatus bays allow the department to house their reserve vehicles and support trailers at the station, allowing for easy maintenance and retrieval. Within the bays the ten-foot clerestory allows for ample natural light. In the winter, the hydronic heating system in the slab keeps the crew and the vehicles’ transmissions and fluids warm.

The core of the living quarters is the kitchen/dining/day room where a long quartz counter separates the kitchen and



the dayroom. The construction-experienced owner was invaluable in helping to select a clean and fresh finish palette for the kitchen. After much discussion, the firefighters decided to stay with shared bunk rooms. While understanding the benefits of individual sleep rooms, they valued the comradery fostered by a shared bunk room.





Wallops Flight Facility, located at Wallops Island on the Eastern Shore of Virginia, serves primarily as a rocket launch site for the National Aeronautics and Space Administration (NASA). The island had previously been served by a 30-year-old fire station building that was prone to flooding, necessitating temporary relocation of firefighting equipment during heavy weather events. It was also located inside the rocket launch hazard zone and experienced significant damage from the 2014 Antares rocket explosion. The new facility, placed north of the hazard zone,



launches. Station highlights include bunkrooms with A-Board furniture, turnout gear storage room with Mobile Ready Rack, GearGrid fire workstation and locker systems, decontamination room with heavy-duty commercial washer extractors, physical training room, SCBA compressor room, maintenance shop, double-sided elevator, kitchen and dining area, as well as training and office spaces.

The HVAC system includes high-efficiency geothermal heat pumps for the administrative portion of the building and infrared gas tube heaters for the engine bays. Specialized lighting was also installed to protect the local sea turtle population from the adverse effects of artificial lighting.

In 2018, the NASA Wallops Island Fire Station was awarded LEED Silver certification, making it the first LEED building at Wallops Flight Facility.



ensures safe operation distances for personnel and equipment.

Due to the station's close proximity to the ocean, durability was a driving design factor. The exterior shell of the new fire station features a pre-cast concrete insulated wall panel structural system and curtain-wall glass to combat hurricane winds in excess of 150 mph and prevent deterioration from salt air and wind-blown sand.

The station consists of a four-bay drive-through apparatus room and facilities to support full-time fire protection of NASA and Navy facilities on Wallops Island and the Mainland Base, as well as increased operational capacity during rocket

Official Project Name: NASA Wallops Island Fire Station

Project City/State: Wallops Island, VA

Date Completed: May 31, 2018

Fire Chief: James Atkins

Project Area (sq. ft.): 16,899

Total Cost: \$6,510,283

Cost Per Square Foot: \$385

Architect/Firm Name: George, Miles & Buhr, LLC

Website: gmbnet.com

Design Team: George, Miles & Buhr, LLC;

Architect: Morgan Helfrich, AIA, LEED AP;

Structural Engineer: Roland Holland, P.E.;

Civil Engineer: Judy Schwartz, P.E., LEED

AP; MEP Engineering: Allen & Shariff, LLC;

LEED Consulting: Sustainable Building

Partners, LLC; NASA Wallops Flight Facility design team led by Randall M. Stanley.



Official Project Name: Norwalk Fire Station
Project City/State: Norwalk, OH
Date Completed: November 15, 2018
Fire Chief: John Soisson
Project Area (sq. ft.): 17,017
Total Cost: \$5,000,000
Cost Per Square Foot: \$293
Architect/Firm Name: Mull & Weithman Architects, Inc.
Website: mw-architects.com
Design Team: Mull & Weithman Architects: Bradley Mull, Joe Weithman, Joe Malone, & Alexis Gauthier; Civil and Surveying: CDE: Adam Weaver; Structural: Korda/Nemeth: Jerry Finley; MEPFT: KLH Engineers

Norwalk, OH, is at the center of the Fireland's, a subregion of the Connecticut Western Reserve, established by the federal government as compensation to the inhabitants of Norwalk, CT, whose property was destroyed by the British in 1779. Their original fire station was built in 1912 and designed for horse-drawn and steam-driven apparatus. Over the years, the city was forced to purchase modified apparatus to fit in the station, as opposed to the apparatus needed to serve the community. The existing station also did not meet accessibility standards or provide adequate facilities to promote diversity within force composition.

The new station's lobby celebrates the department's history and includes multiple displays featuring significant artifacts and the original station's refurbished fire pole. A donor wall at the entrance to the training/community room honors the individuals and corporations that donated nearly \$2 million making this facility pos-

sible. Administrative areas include a watch room, which mediates between the lobby, apparatus bays and front apron, duty office, fire inspector and chief's office.

The station features five drive-thru apparatus bays with adjacent ancillary spaces that are sized to support current operations and anticipated future growth. Firefighter health concerns were of vital importance in this building's design. Features employed to minimize the risk for cross-contamination include pressurized vestibules, a decontamination alcove, unisex toilet room in the bays, a gear laundry room and a specialized turnout gear storage room. The living quarters have an open concept day room and kitchen/dining space. Each dorm room has individual lockers and four beds that can house



up to 24 firefighters, accommodating current requirements and future growth. Dining is provided around a large central island, modeled after the historic firehouse. A generous physical fitness room and many training opportunities were incorporated into the design to facilitate on-site training.





The design of Fire Station No. 03 provides a modern, yet complementary, counterpoint to the adjacent historic golf course clubhouse and the surrounding residential neighborhood allowing the facility to harmonize with its site over time. The structure includes a three-bay apparatus room and living quarters to house 11 firefighters. Located on the second floor, a 50-person multi-purpose room provides space for employee training and is a venue for community gathering. An exercise room, kitchen, day room, and gardening area provide areas for socialization and firefighter wellness. A roof terrace decom-



Official Project Name: Salt Lake City Fire Station 03

Project City/State: Salt Lake City, UT

Date Completed: October 1, 2018

Fire Chief: Chief Karl Lieb

Project Area (sq. ft.): 17,800

Total Cost: \$7,600,500

Cost Per Square Foot: \$427

Architect/Firm Name: Blalock and Partners

Website: blalockandpartners.com; tca-inc.com

Design Team: Kevin Blalock, Principal Blalock and Partners – Design Architect / Architect of Record; Brian Harris, Principal TCA Architecture + Planning Fire Station Specialist Architect; BHB Engineers Structural; Van Boerum & Frank Associates Mechanical; Spectrum Engineering Electrical; Terracon Geotechnical Engineers

pression lounge, off the second floor, affords panoramic eastern views of the golf course and to the Wasatch Mountains beyond.

Within the design contract, Salt Lake City Corporation issued a requirement that all new city-owned facilities achieve Net Zero Energy using 100 percent on-site renewable sources. As a Net Zero Energy facility, the design solution incorporates a variety of sustainable strategies: a geothermal HVAC system; a radiant slab; photovoltaic power supply; bioswale stormwater filtration; a high-performance building envelope; triple-paned glazing with ceramic frit; LED lighting and automated lighting control system.

The 17,800-square-foot facility, located on a very tight site, dictated a two-story solution and influenced the building's massing to maximize the solar panel exposure.

Exterior cladding includes a pre-patinated zinc

panel and a high-performance concrete skin. Where greater quantities of glass were desired on the west face, the zinc cladding was perforated to reduce solar heat gain but still affords views to the exterior and connection to the community. The architect worked closely with the concrete cladding installer to create a panelized approach allowing off-site pre-fabrication of smaller concrete modules into larger panels. This resulted in greater quality control and a faster installation, with no exposed fasteners.





Fire Station No. 32 replaced an outdated 1977 fire station that was undersized to serve the growing residential and commercial areas. The new station is the district's flagship station designed to achieve a civic and traditional structure and visually relate to the recently constructed Station 31. Taking advantage of their proximity, the stations create a framework for future projects to develop a district identity. Station No. 32 was designed to meet the current and future growth of the fire department and community. Due to the site size and slope, the design utilized two stories with



The design was challenged by a 60-foot water easement on the northwest side, access easements and preservation of a large oak tree on the south side of the property. All these issues were successfully addressed, and the oak tree stands proudly adjacent to the station. Equally challenging was the substantial program required for the large apparatus and as the flagship station, a dedicated training room was needed.

a basement to transition site grade, reduce retaining walls, and building footprint to house mechanical equipment and to maximize open space, vehicle circulation needs, and landscaping. The station is approximately 16,400 gross square feet above grade. Apparatus bays and apparatus support spaces account for approximately 7,390 square feet. Living, sleeping, office, training and circulation spaces account for about 9,010 square feet.

The crew office provides immediate access to the bays, views of the apron and station approach for safety. A crew study located on the second floor of the tower provides space for social interaction. The fitness area has a covered patio for year-round use. The apparatus bay hot zones are separate from living areas both physically and with mechanical positive pressure on the living side.

Official Project Name: South Metro Fire Rescue, Station No.32
Project City/State: Centennial, CO
Date Completed: January 1, 2019
Fire Chief: Bob Baker
Project Area (sq. ft.): 16,400
Total Cost: \$7,957,000
Cost Per Square Foot: \$485
Architect/Firm Name: OZ Architecture, Inc.
Website: ozarch.com
Design Team: OZ Architecture: Joe Levi Principal; Eric Becker Associate, Project Manager/Designer; Structural Engineering: SA Miro Inc.; Mechanical Engineering: Swanson Rink; Electrical Engineering: AE Design Group; Civil Engineering: Bowman Consulting Group LLC; Landscape Design: Stanley Consultants Inc.; Specifications: Delet LLC.





Official Project Name: Sun City Fire & Medical Station No. 133
Project City/State: Youngtown, AZ
Date Completed: August 1, 2018
Fire Chief: Ron Deadman
Project Area (sq. ft.): 16,248
Total Cost: \$4,653,851
Cost Per Square Foot: \$286
Architect/Firm Name: Ken Powers, Perlman Architects of Arizona, Inc.
Website: perlmanaz.com
Design Team: Architecture: Perlman Architects; Ken Powers, Architect of Record; Erik Thomsen, Designer; Gerrald Adams, Project Manager; Civil: Dowl Engineers; Structural: Simply Structural; Mechanical/Plumbing: Associated Mechanical; Electrical: Akribis Engineers; Fire Protection: Arizona Verde; Landscaping: Logan Simpson.

Sun City Fire and Medical Department serves the communities of Sun City, Youngtown, and Citrus Point protecting approximately 17 square miles with three fire stations. This 30,000-square-foot site is located in downtown Youngtown and replaced the existing 2,791-square-foot fire station. This site was a property the fire department purchased years ago in the hopes of relocating the existing fire station to a better location to serve the Youngtown residents.

Due to the maximized program and extremely small site, the design team and fire department worked closely with the city of Youngtown and the county to approve necessary variances modifying the setbacks and overall height requirements, allowing the

facility to be constructed on the proposed lot meeting the needs of the fire department. This 16,248-square-foot fire station is a two-story, three-bay drive-through station with an additional back-end bay for a future battalion chief or reserve apparatus. On the first floor is

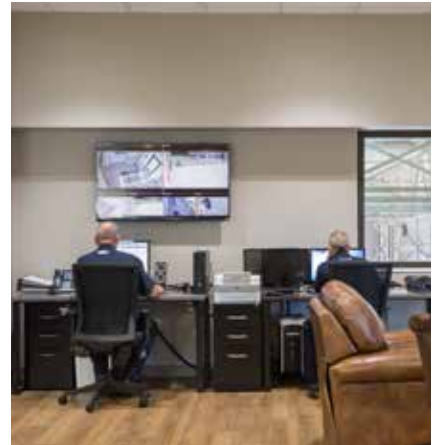


a secured lobby, public restroom and a community/training room, watch room, captain's offices, report writing office, ambulance billing office, kitchen, din-

ing and day room. A large fitness room is located with exterior access to a patio area and secured backyard. The support side of the bay houses all of the work spaces starting with a decontamination, PPE and turnout storage, SCBA work order and compressor room. The stairs lead to a training mezzanine with several opportunities for in-house training and some bulk storage space.

On the second floor, the facility includes 12 private gender-neutral dorms, six unisex restrooms, clean laundry, a large study/quiet day room, two sets of response stairs and elevator access. Each room has operable windows for natural light and ventilation for each firefighter.





The Violet Township Fire Station 591, located in Pickerington, OH, is the result of a collaborative effort by Violet Township, the City of Pickerington and the Pickerington Chamber of Commerce to keep a fire station in the historic Pickerington Business District. When it came time to replace the old station, a design firm was commissioned to conduct a needs analysis and site evaluation to determine the programmatic needs of the new station and evaluate several potential sites for a new station. It was only after the efforts of the township, the city



and local chamber that a site was assembled—comprised of a vacated right-of-way, purchased property and the former fire station site—meeting the desire of all parties that the new replacement station be built within the business district. The new station not only meets this mandate; it is a more prominent feature in the town, providing a focal point at its most prominent intersection and reinforcing the historic character of the district.

The station includes living quarters for 12 career firefighters, four apparatus bays, a community/training room, fitness room, and offices for the chamber of

commerce. The public entrance is located on Columbus Avenue, with the apparatus bays oriented to Lockville Road (as was the former fire station).

The site has a 10-foot fall from north to south, resulting in a split-level design with apparatus bays on the lower level, offices and training room on the second level (half level above the bays) and living quarters on the third level. The plan is organized around a central stair (with fire pole) and elevator for maximum circulation and response efficiency.

The station includes a training/hose tower with adjoining training mezzanine overlooking the apparatus bays.



Official Project Name: Violet Township Fire Station 591

Project City/State: Pickerington, OH

Date Completed: April 5, 2018

Fire Chief: Michael J. Little

Project Area (sq. ft.): 18,875

Total Cost: \$6,100,000

Cost Per Square Foot: \$325

Architect/Firm Name: KZF Design

Website: kzf.com

Design Team: KZF Design: Mark Shoemaker, Project Manager; Brady Hartmann, Project Architect; Dustin Gohs, Civil Engineer; Stan Houston, Plumbing Engineer; Dee Edwards, Electrical Designer; Mark Bukala, Structural Engineer; Steve DeSalvo, Construction Administration; Prater Engineering: Stephen Danielson, Mechanical Engineer; General Contractor: Robertson Construction, Inc.





FIREHOUSE
WORLD 

Train. Learn. Grow.

Save the Date **FEBRUARY 24-27, 2020**

LAS VEGAS CONVENTION CENTER, LAS VEGAS, NV | firehouseworld.com

Request information at firehouse.com/10832870



The design and construction of Fire Station 6 was driven by the need to replace an outdated and inadequate existing fire station. The site selected by the city was on the edge of an existing city park. The project included not only the construction of a new fire station, but a reconfiguration of the park, construction of a new community building and a new park play structure designed with firehouse-themed play elements.

The initial desire of the department was to construct a three-bay, drive-

through station. However, due to budget constraints only a two-bay station was achievable. The design, while still respecting the need to create a clear delineation between different contamination zones for the station, was designed to allow for a third bay to be added at some point in the future.

The layout of the station was designed to provide quick access from all areas of the station to the apparatus floor. The public/crew side of the station includes core features such as a secured



lobby, individual sleeping rooms, gender flexible shower rooms, a physical fitness area opening to an exterior covered area, kitchen/dining area open to a secure courtyard, a "clean" laundry room, and easily maintained polished concrete floors. The drive-through apparatus room includes decontamination and cleaning facilities connected to a turnout gear storage, as well as a drying room and a restroom to prevent cross-contamination.

The site design incorporated the existing park elements and community



Garden Grove Fire Station 6

GARDEN GROVE, CA



Official Project Name: Garden Grove Fire Station 6

Project City/State: Garden Grove, CA

Date Completed: October 23, 2018

Fire Chief: Paul Whittaker, Division Chief/
Fire Marshal

Project Area (sq. ft.): 8,540

Total Cost: \$4,852,650

Cost Per Square Foot: \$568

Architect/Firm Name: Jeff Katz
Architecture

Website: jeffkatzarchitecture.com

Design Team: Architect: Jeff Katz, Jeff Katz Architecture; Contractors: Jim Summers, EC Constructors, Inc.; Bob Burch, R.A. Burch Construction; Structural Engineer: Don Orié, Orié 2 Engineering, Inc.; Civil: Barry L. Munson, San Dieguito Engineering, Inc.; Mechanical/Plumbing: Doug Isaaks, McParlane & Associates; Electrical: Tim Locklear, Elen Consulting, Inc.; Landscape: Cheri Blatner-Pifer KTU&A



building in a cohesive design that allows the fire department to operate efficiently while enhancing their visibility in the community. The station design is fully accessible and was designed to provide a clear civic presence while complementing the surrounding community mid-century aesthetic.





The development of Vancouver Fire Department Stations 1 and 2 represents a cohesive single project to design and deliver a prototype that can be effectively re-used in a variety of contexts. The project began with an in-depth facility condition assessment of 10 stations in Vancouver, analyzing capacity and community needs. The design team's development strategy enforced consistency between facilities, and supported shared goals. The team worked with the fire department and community stakeholders to design stations that fit in their respective neighborhoods.

The project challenges included a severely constrained site for Station 1. The site is situated on an acre in an urban context, bounded by busy streets, and



positioned at the convergence of four distinct neighborhoods, represented by four separate neighborhood associations. The design maximized the use of buildable area: the station's footprint covers three quarters of the site. The prototype achieved this, while remaining flexible enough to be successfully used in other sites with different challenges and opportunities. The design allows for the addition of more bunk rooms and bays, and can be expanded in multiple directions. A third station, Station 11, currently in design, is successfully utilizing the prototype design.

The prototype includes a lobby that can be flexibly used as an education and training area. Station 2's lobby also serves as a backup Emergency Operations Center, providing an important redundancy for the fire department. Station 1 includes a police drop-in office, while Station 2 includes a battalion chief office.

The design distinctly separates the "clean" and "dirty" sections of the stations, with a decontamination shower located immediately off the apparatus bay, and a mudroom off the living quarters. There are individual toilet and shower rooms, and private bunk rooms with individual temperature controls. One bunk room can serve as a nursing mother's room.



Official Project Name: Vancouver Stations 1 and 2

Project City/State: Vancouver, WA

Date Completed: March 1, 2019

Fire Chief: Joe Molina

Project Area (sq. ft.): 13,500

Total Cost: \$11,117,945

Cost Per Square Foot: \$390

Architect/Firm Name: Mackenzie

Website: mcknze.com

Design Team: Mackenzie: Jeff Humphreys, Principal-in-Charge; Scott Moore, Project Manager; Cathy Bowman, Project Architect; Ryan Baker, Structural Designer; Andrew Robinson, Structural Designer; Bob Frentress, Civil Engineer; Todd Johnson, Land Use Planner; Steven Tuttle, Landscape Architect; Interface Engineering, MEP



Station 6 is an 8,335-square-foot, two-story, resilient, essential services fire station constructed in the heart of downtown Menlo Park. This station replaced the prior 60-plus-year-old, outdated single-story building that was one-third the size of the new, modernized structure. The district purchased a home directly behind the facility to allow for the construction and expansion of the new station. This station was constructed of non-combustible building materials including structural steel and aluminum framing that were made in the United States. The traditional brick with arched openings presents an attractive façade that conceals an efficient modern facility that includes drive-through access, a self-

contained, properly ventilated turnout room, secured rear yard and a diesel generator for emergency backup power.

The new station provides six single-occupancy bedrooms, living and office space and a dedicated fitness room, which is a significant upgrade from the prior station where both the fitness and turnout equipment resided inside the apparatus bay. The district incorporated several technological upgrades to the station's alerting system including smart lighting, gas shut-off, and dorm room selector capability. Furthermore, the district became the first fire agency in Northern California to incorporate an early earthquake warning system with the U.S. Geological Survey's "ShakeAlert."

Official Project Name: Menlo Park Fire Protection District Fire Station 6
Project City/State: Menlo Park, CA
Date Completed: May 14, 2019
Fire Chief: Harold Schapelhouman
Project Area (sq. ft.): 8,335 (three structures)
Total Cost: \$7,987,688
Cost Per Square Foot: \$825
Architect/Firm Name: CJW Architecture
Website: cjawarchitecture.com
Design Team: Bill Gutgsell, Architect, CJW Architecture; Jonathan Hitchcock, Project Manager, Menlo Park Fire District; Scott Ritter, Construction Manager, Consolidated CM; Melvin Weidner, Inspector of Record



When a significant earthquake is detected an audio alert and countdown will sound, gas-operated appliances will shut off, the station lights will turn on and the apparatus bay doors will open.

The purchase of the rear lot provided both temporary crew quarters during construction and needed space for the construction of a display building (1,005 square feet) which showcases the district's antique apparatus and historical firefighting equipment and the relocation of the original 1899 carriage house (342 square feet) and hose wagon to a more centrally and publicly accessible location that can be visited by school children and members of the community.



Official Project Name: Fire Station 5
Project City/State: Anaheim, CA
Date Completed: August 1, 2018
Fire Chief: Pat Russell
Project Area (sq. ft.): 9,543
Total Cost: \$5,000,000
Cost Per Square Foot: \$532
Architect/Firm Name: WLC Architects, Inc.
Website: wlcarchitects.com
Design Team: WLC: Kelley Needham, Architect, Principal in Charge; Shih-Jing Yen, Architect, Project Manager; Simon Chang, Architect, Designer; Anaheim Fire and Rescue: Tim O'Hara, Deputy Chief; Mike Molloy, Deputy Chief; Jeff Alario, Deputy Chief; Contractor: Nathan Complin, Project Executive, Erickson-Hall Construction Company



Fire Station 5 is a new 9,543-square-foot facility built by the City of Anaheim. The one-acre site is located in a mixed-use area of the city. The station is designed to accommodate eight firefighters in an individual dormitory setting. Station features include a three-bay, double-deep apparatus room, administrative office areas, kitchen, dining room, day room, physical training

room, shop, medical supply storage, laundry room, locker rooms and the various support spaces required for a facility of this type. Circulation within the station is organized around a core of work and living spaces intended to maximize daylight opportunities for more traditionally occupied areas. Polished concrete and epoxy floors are used extensively throughout the station for ease of maintenance. Stainless

steel is utilized in the kitchen for countertops, cabinets and appliances.

Site features include visitor parking, secured firefighter parking, fuel island, emergency generator and a covered patio area. The station was designed using a combination of plaster and stone veneer in keeping with the main architectural style of the area. Sloped roof forms are used in conjunction with parapet areas designed to screen mechanical equipment.

The project was completed using the design build method. The city and fire department worked closely with the design build team to ensure the project came in on time and on budget.





Official Project Name: Cedar Park Fire Station No. 5

Project City/State: Cedar Park, TX

Date Completed: April 29, 2019

Fire Chief: James Mallinger

Project Area (sq. ft.): 14,618

Total Cost: \$4,557,995

Cost Per Square Foot: \$312

Architect/Firm Name: Brown Reynolds Watford Architects, Inc.

Website: brwarch.com

Design Team: BRW Architects: Ray Holliday, AIA, Principal; Justin Dreyer, Project Manager; Dianne Jones, Project Coordinator; Colin Buckley, Project Designer; Madelyn Walker, Project Designer; MEP: Chris Claudet, MEP PE, Jordan & Skala Engineers; Structural: Nikolas Gomes, Structural PE, Gessner Engineering; Civil: Frank DesRoches, Civil PE, Gessner Engineering

Cedar Park is a rapidly growing suburb of Austin in the Texas hill country and a longtime client of the architect. This station was funded by both the Cedar Park Fire Department and Williamson County EMS, and the land was donated by the Cedar Park Regional Medical Center to which it is now adjacent. The southern drive will eventually be extended to connect the hospital with Cottonwood Creek Trail, and the existing jogging trail has been altered to run alongside this new drive.

Due to the shared nature of this station, the design team focused on ensuring the fire department and the EMS would function independently and cohesively. Throughout the process both entities had representatives on the design committee in order to ensure this independence. This input resulted in separate alerting systems coordinated within individual bedrooms, a bay dedicated for Williamson County EMS with its own signage, and designated watch offices and captain's suites.

The new 14,618-square-foot neighborhood station is full of hill-country charm, featuring heavy timber trusses, local masonry, and a welcoming front porch. The layout of the 2.1-acre site and the orientation of the building were designed to save

as many of the site's numerous, mature oak trees as possible. Upon entering the building, the public will have access to a community room and public restroom, while the rest of the station remains secure. The station sleeps eight firefighters in private rooms with an additional two officer suites, offering the command staff added privacy.



This station successfully houses both the fire and the EMS departments in a comfortable environment and ensures the efficient operation of each within the same station.



Official Project Name: Cortez Fire Protection District
Project City/State: Cortez, CO
Date Completed: September 19, 2018
Fire Chief: Jeff Vandevoorde, Past Chief
Project Area (sq. ft.): 13,400
Total Cost: \$4,080,000
Cost Per Square Foot: \$304
Architect/Firm Name: Pacheco Ross Architects, P.C. a division of H2M architects + engineers
Website: pra-pc.com
Design Team: Pacheco Ross Architects a division of H2M architects + engineers: Dennis Ross, David Pacheco, Katrina Pacheco; Consultant Architects: Morayma Salas, Cuningham Group Architecture, Inc.; Rick Feeney, Feeney Architect; Civil: Goff Engineering + Surveying Inc; Structural: KL&A, Inc.; MEP: Branch Pattern, Inc.; GC: Weeminuche Construction Authority; Cortez Fire District

The existing fire station was long beyond its useful life. The Fire Protection District owned a small, urban corner site; employing skillful firematic design could accommodate a new facility. To afford a new facility at this site, the district needed several funding streams. Chief among these was applying for a \$2 million Department of Local Affairs grant. Creating a dream team composed of a nationally recognized firematic design architect and knowledgeable local consultants, the district and designers worked together to create a cost-effective, state-of-the-art facility that observed stringent local land use regulations, met response and operational needs and was able to qualify and receive the entire grant. A major component of the grant was to meet a minimum LEED Silver certification level. Upon completion, through smart sustainable design decisions, there are enough points to achieve LEED Gold certification after enhanced commissioning.

This project included facilitating program needs for the fire department, city and responders in order to balance stakeholder desires and issues. Demolition of an existing district facility that included hazardous material abatement was necessary on the small site. The firehouse underwent rigorous value-engineering to meet budget



constraints without sacrificing operations, health or safety.

The 75-year lifespan structure includes advanced active training regimens including: bailout, stair evolutions,



exterior rope work, manhole, confined space, rappelling points, window evacuation, ladder/floor-to-floor transfer, all with an adjacent state-of-the-art firematic classroom. The classroom is accessed through a separate entry for visitors but is directly connected to training and Hot-Zone areas. The design optimized response with access onto both frontage roads, drive-through capability from a very tight alley, Hot Zone/Cold Zone separation, contaminant mitigation systems, sustainable technologies and materials, space for each identified need now and into the foreseeable future, all with the idea of operational priority and responder health and safety as critical elements.





Fire Station 1 is a new 11,675-square-foot facility built by the City of Costa Mesa. The station was designed to replace an existing station on the same site. The original station was completed in 1962. The 1.1-acre site is located in a commercial area of the city adjacent to a large postal facility. The station is designed to accommodate 10 firefighters in an individual dormitory setting. Station features include a three-bay, double-deep apparatus

room, administrative office areas, kitchen, dining room, day room, physical training room, shop, medical supply storage, laundry room and the various support spaces required for a facility of this type. Jack and Jill restrooms are used to maximize the efficiency of the layout. An interior patio was created to help bring natural daylight into the core of the building.

Site features include visitor parking, secured firefighter parking, fuel island, emergency generator and hose drying

rack. A small assembly area is designed at the building entry and is centered around a memorial for fallen firefighters. The area is intended for ceremonial events and press conferences. The project received a LEED Gold certification. The scale and massing of the station are derived from the buildings in the area, the adjacent postal facility and the simple lines of the previous mid-century station.



rack. A small assembly area is designed at the building entry and is centered around a memorial for fallen firefighters. The area is intended for ceremonial events and press conferences. The project received a LEED Gold certification. The scale and massing of the station are derived from the buildings

in the area, the adjacent postal facility and the simple lines of the previous mid-century station.

Both the City of Costa Mesa and the



Official Project Name: Fire Station 1
Project City/State: Costa Mesa, CA
Date Completed: July 1, 2018
Fire Chief: Daniel Stefano
Project Area (sq. ft.): 11,675
Total Cost: \$6,867,000
Cost Per Square Foot: \$588
Architect/Firm Name: WLC Architects, Inc.
Website: wlcarchitects.com
Design Team: WLC: Kelley Needham, Principal-in-Charge; Bernhard Wassink, Project Manager; Bernhard Wassink, Designer; CMFD: Tim Vasin, Battalion Chief; Jason Pyle, Division Chief;
Contractor: Hatem Ibrahim, Project Manager, Horizons Construction; Construction Management: Michael Villegas, Project Director, Kitchell CEM





Official Project Name: Daisy Mountain Fire Station No. 145
Project City/State: Phoenix, AZ
Date Completed: December 1, 2017
Fire Chief: Mark Nicholas
Project Area (sq. ft.): 11,854
Total Cost: \$5,707,641
Cost Per Square Foot: \$481
Architect/Firm Name: Perlman Architects of Arizona, Inc.
Website: perlmanaz.com
Design Team: Perlman Architects: Ken Powers, Architect of Record; Erik Thomsen, Designer; Gerrald Adams, Project Manager; Civil: Dowl Engineers; Structural: Simply Structural; M/P: Associated Mechanical; Electrical: Akribis Engineers; Fire Protection: EJ Engineers; Landscape: Logan Simpson

Daisy Mountain Fire & Medical (DMFM) is one of the largest fire districts in the state. Protecting approximately 200 square miles, serving the communities of New River, Desert Hills, Anthem, and Black Canyon City, AZ. This fire station was the first new station designed and constructed by the DMFM in 20 years and it replaced an

newly paved shared entrance, a larger parking lot with 33 spaces, and a new water line for horse trough. Perlman Architects worked with the fire district, the community and the Anthem Design Committee to develop an aesthetic that complemented the existing Ranch and Spanish style of the surrounding neighborhoods.



existing 7,000-square-foot facility. Fire Station No. 145 is an 11,854-square-foot station.

The station sits on unincorporated land, which requires private water, consisting of a well, pump house and a 30,000-gallon storage tank, a septic system, and on-site propane is utilized for heating and cooking. The facility is protected by a fire suppression system utilizing the on-site water storage and a diesel fire pump. It also has on-site diesel fuel storage and dispensing system for the fire apparatus.

Access to the existing Anthem Trailhead, which is located north of the station, is further enhanced with a



The fire station includes three drive-through bays, eight private gender-neutral dorms, three unisex restrooms, firefighter and captain's offices, EMS and

general storage rooms, fitness, and clean laundry rooms. The kitchen, dining, day room and fitness room are all located on the living side of the station.



The new 8,600-square-foot fire station in Belleair Bluffs, FL, was designed to include three drive-through apparatus bays to house fire and rescue vehicles and equipment. The station service areas governed by Pinellas County, the Town of Belleair, the City of Belleair Bluffs, and the City of Largo.

The building provides six bunk rooms for the lieutenant and crew as well

as a day room, kitchen, fitness room, private bathing facilities, and conference/training rooms. The fire station includes a ladder training assembly at the rear of the building. There are two horizontal steel supports attached to the exterior of the building that allow the emergency response staff to perform ladder drills. The assembly accommodates a variety of ladder sizes. Additionally the day room and conference room are designed to accommodate in-person and online continuing education training courses.

The building was designed to

meet Florida Building Code wind load requirements for essential facilities and is rated for a Category 5 hurricane. The building design implemented low maintenance materials and systems and sustainable features. Materials included polished concrete flooring and stucco with concrete block and was designed to use the local architectural vernacular to fit in with the neighborhood. The design process began in February 2016 and construction started in November 2016. The fire station was built in just under one year.

Official Project Name: Largo Fire Station #43

Project City/State: Belleair Bluffs, FL

Date Completed: October 31, 2017

Fire Chief: Shelby Willis

Project Area (sq. ft.): 8,600

Total Cost: \$3,700,000

Cost Per Square Foot: \$430

Architect/Firm Name: Sweet Sparkman Architects

Website: sweetsparkman.com

Design Team: Sweet Sparkman Architects; Todd Sweet, AIA, LEED AP, Architect of Record; Karl Bernhard, AIA, NCARB, Project Architect/Manager; Hannah Boehmer, Associate AIA, Production Designer





The Pine Valley Fire Station is a 13,098-square-foot newly constructed facility. This fire station operates in rural San Diego County and battles some of the fiercest wildfires in the state. The two-story fire station includes three drive-through bays and a half bay for an ambulance or battalion chief vehicle, associated support spaces, an administrative/training area, and living accommodations for up to 15 personnel. The living spaces include a fitness room, kitchen, dining, day room, individual bunk rooms and restroom facilities, and administrative office space. This

LEED Silver project was completed utilizing a Design-Build delivery method, enabling the project to be designed and constructed in 18 months from award of contract to grand opening.

The building design incorporated best design practice for Hot Zone design to limit the opportunity for contaminants from being spread into the living portions of the fire station. This includes functional separation of spaces, the ability to clean gear and equipment prior to entering the station and incorporating positive-pressure ventilation systems and direct source capture vehicle exhaust systems to minimize air contamination within the station. Furthermore, the design team developed a functional design to minimize travel distance to the apparatus bays to ensure that fire personnel were able to respond in the most efficient manner. The two-story design includes both a stair



direct to the apparatus bay, as well as an exterior egress stair for station personnel.

The design-build team worked closely with a variety of stakeholders to ensure all programming and project goals were attained and a quality of craftsmanship and durability lasting 50-plus years was realized. Through careful planning and attention to detail, the Pine Valley Fire Station supports CAL FIRE's mission, fits well within its context, and has been enthusiastically received by both fire personnel and the community.

Official Project Name: County of San Diego Fire Station 44

Project City/State: Pine Valley, CA

Date Completed: December 18, 2018

Fire Chief: Tony Mecham

Project Area (sq. ft.): 13,098

Total Cost: \$7,437,650

Cost Per Square Foot: \$568

Architect/Firm Name: Jeff Katz Architecture

Website: jeffkatzarchitecture.com

Design Team: Design-Build Contractor:

Jim Summers, EC Constructors, Inc.;

Architect: Jeff Katz, AIA, Jeff Katz

Architecture; Structural Engineer: Don

Orie, Orie 2 Engineering, Inc.; Civil: John

Prince, PE, PMP, QSD, Delane Engineering;

Mechanical & Plumbing: Doug Isaaks, P.E.

McParlane & Associates; Electrical: Tim

Locklear, Elen Consulting, Inc.;

Landscape: Lili O'Connor, Parterre





The new South Metro Fire Rescue Station No. 31 replaced an out-dated 1983 station on a highly visible corner in the residential neighborhood of Greenwood Village, CO. The department and design team placed a high priority on the following: integrated design with the neighborhood to support the departments “good neighbor”



ethos, efficient response, living area isolation from the apparatus bays and drive through site circulation. The station presents two public facades using forms and materials similar to the residential areas. The building was organized around a central, direct stair and firepole providing an option for the responding firefighter. Station No. 31 utilizes drive-through apparatus bays to provide easy response and return of the Dive Rescue 3 unit housed in the station along with a medic and engine.

The two-story living area maximizes open space and concentrates the building volume away from the neighbors. The building materials are simple and durable. Hipped roofs float via a clerestory over a brick base breaking up the mass and softening the height. The clerestory provides daylight to the living quarters and apparatus bays. The large overhangs reduce glare and heat gain. The station includes state-of-art Nederman vehicle exhaust systems and a decon room with associated equipment for health safety.

Official Project Name: South Metro Fire Rescue Station No. 31
Project City/State: Greenwood Village, CO
Date Completed: May 1, 2016
Fire Chief: Bob Baker
Project Area (sq. ft.): 12,145
Total Cost: \$5,335,000
Cost Per Square Foot: \$439
Architect/Firm Name: OZ Architecture, Inc.
Website: ozarch.com
Design Team: OZ Architecture: Joe Levi, Principal; Eric Becker, Associate, Project Manager/Designer; Structural Engineering: Enayat Schneider Engineering, Inc.; Mechanical Engineering: BA Consultants Inc.; Electrical Engineering: AE Design Group; Civil Engineering: Bowman Vision Land; Landscape Design: Stanley Consultants Inc.



The station is a durable 75-year building, exceeding current energy standards.

The station’s outdoor patio was placed with direct access from the kitchen near the sidewalk adjacent to Orchard Road to encourage interaction between the community and the crews. Unique to this station is the Dive Rescue Team. This large dive vehicle, towing a trailered boat required careful consideration of circulation, turning radiuses and drive-through bays to eliminate off-street backing, increasing safety for crew and public.



Fire Station No. 2 (FS2) is bisected programmatically into work and living spaces. The work spaces include three apparatus bays, turnout, shop, fitness and medical rooms. The living spaces include communal living, dining and lounge spaces, surrounded by eight bedroom suites.

The programmatic divide is evident from the exterior and within the interior. The work spaces are expressed as open and transparent, which gives them an appearance of being “public” as opposed to the more “private” masonry façade of

the living spaces. These spaces have an abundance of glass creating a visual connection and an inviting appearance from the street front.

The bright yellow fire trucks are on display for the community to enjoy. Inversely, the use of masonry for the living quarters reflects traditional, residential construction and delineates the private spaces of the project. The smaller punched openings offer more privacy to the resident firefighters, while being large enough to provide egress and fresh air to the sleeping spaces. The outdoor space is contained by brick walls and landscaping to create a private outdoor patio space.

Modern materials are used throughout the building. Modern landscaping proportions and organizing elements were used around the site, including horse tail reed. Designing the living quarters and common spaces was closely discussed with the firefighters chosen to operate the station.

The City of Springdale has remained equally impressed by the efficiency and the aesthetic of the station. FS2 has successfully become the prototypical design for the city to repeat throughout its jurisdiction. As a result, two more stations have been completed, one is currently being constructed, and another site is



being developed. In response to unique site constraints and the department’s programmatic needs, minor adjustments have been made to the subsequent projects. Regardless, each station remains largely like Fire Station No. 2.

Official Project Name: Springdale Fire Station No. 2
Project City/State: Springdale, AR
Date Completed: September 1, 2015
Fire Chief: Mike Irwin
Project Area (sq. ft.): 10,000
Total Cost: \$3,414,709
Cost Per Square Foot: \$341
Architect/Firm Name: Miller Boskus Lack Architects, P.A.
Website: mbl-arch.com
Design Team: Miller Boskus Lack Architects, P.A.: Roger Boskus, AIA; Audy Lack, AIA; Greg Walker, AIA; Jason Armontrout; Mary McGrath, AIA, Mary McGrath Architects

FIREHOUSE



Station Design Conference
Public Safety Facilities: Fire, Police and Shared

May 12-14, 2020
Crowne Plaza Hotel, Rosemont, IL



Station Design Conference is a three-day event covering the latest in station design innovations, technology and healthy concepts. Attendees include fire and police officials, officers, city managers and architects, gathered together to share insights, new ideas and best practices in effective and efficient station design.

Owned by: **ENDEAVOR**
BUSINESS MEDIA

Registration opening soon!
Learn more: fhstationdesign.com

Request information at firehouse.com/12389445



The new fire headquarters for Peekskill, NY, is designed to meet the needs of an historic community and a department with a 200-year history. In 1608, Henry Hudson anchored at Peekskill on the Hudson River. The Continental Army established its headquarters here in 1776. President Lincoln’s inaugural train and funeral train both stopped in Peekskill.

The Peekskill Volunteer Fire Department was founded in 1813. Before the current consolidation, six companies occupied five stations—two from the 19th century and the newest 50 years old—all with glaring operational



and firefighter health and safety issues. The department of 140 volunteer and 26 career firefighters covers 4.3 square miles with a population of 24,300 people and makes 3,400 calls per year.

The new fire headquarters is the culmination of 10 years of studies and planning. Mitchell Associates has worked closely with the department and city since 2007 to develop a design that addresses the following goals: consolidate operations at a centrally-located facility; meet today’s operational needs and health and safety standards; provide a

Peekskill Fire Headquarters

PEEKSKILL, NY



Official Project Name: Peekskill Fire Headquarters
Project City/State: Peekskill, NY
Date Completed: December 12, 2018
Fire Chief: John Rose, III
Project Area (sq. ft.): 30,788
Total Cost: \$12,114,000
Cost Per Square Foot: \$393
Architect/Firm Name: Mitchell Associates Architects, PLLC
Website: mitchell-architects.com
Design Team: Architect: Mitchell Associates Architects; John Pappas, Former Chief; Structural Engineer: Craig Maloney, P.E.; MEP Engineer: Huston Engineering, LLC; Civil Engineer: Fusion Engineering, P.C.; Landscape Architect: Kenneth Costello, L.A.; Estimator: Nasco Construction Services, Inc.

home for combined volunteer and career members; construct a permanent building made of traditional materials that demonstrates civic pride and the city's commitment to its future; prominently display their hand pumper (owned since 1826) and parade wagon (owned since the 1870s); and show proper respect to the fire service and those who protect us.

The building materials and forms create a timeless

streetscape for the centrally-located building that serves as a new gateway to the city. Natural stone was quarried and machined in Western Pennsylvania to shapes reflecting existing buildings in Peekskill.

Peekskill is in the midst of a revitalization including a recently awarded \$10 million economic development grant. The new fire headquarters helped the city to position itself to successfully receive the grant.





Official Project Name: Harris County ESD No. 7 - Spring Fire Station No. 75
Project City/State: Spring, TX
Date Completed: October 3, 2018
Fire Chief: Scott Seifert
Project Area (sq. ft.): 17,827
Total Cost: \$7,986,539
Cost Per Square Foot: \$448
Architect/Firm Name: Brown Reynolds Watford Architects, Inc.
Website: brwarch.com
Design Team: BRW Architects: Ray Holliday, AIA, Principal; Amanda Rotter, Project Manager; Lisa Andel, Project Coordinator; Chris Claudet, MEP PE, Jordan & Skala Engineers, Inc.; Nikolas Gomes, Structural PE, Gessner Engineering; Robert Schmidt, Civil PE, Strand Associates, Inc.

Spring Fire Station No. 75 in Spring, TX, was a pre-existing station when the architect was brought in. Due to a mold infestation and inadequate space, the Harris County Emergency Services District (ESD) decided to construct a new facility to replace it. With the acquisition of the adjacent used

car lot, it was decided that the new station would be located on the same site as the existing station. Harris County ESD No. 7 teamed up with a neighboring ESD to keep operations running off-site during construction. The design team's focus centered on meeting the department's parking needs, providing appropriate apparatus maneuverability, and meeting the programmatic requirements of the ESD on the limited site.

The new station adds much needed character to this commercial area by using traditional materials with a modern touch. In the completed 17,827-square-foot facility, the design team created transparency within the building by exposing the structural skeleton, highlighting the structural components. A specialized acoustical roof decking was created specifically for this project to allow for open and spacious rooms without the typical sound reverberation issues in such spaces. The northern orientation



of the building allows for seamless clerestory curtain walls to fill the public spaces with warm, natural lighting, while a new variable refrigerant flow HVAC system efficiently heats and cools the station. "Ceiling bridges" and fur-downs above private rooms were incorporated to hide the ductwork and conduits, leaving the large, open space streamlined and clean.

The interior showcases a large amount of reclaimed barn wood as wall accents, reinforcing the overall warm, inviting feel of the station's public spaces. The new station provides all the additional space that the Spring Fire Department required with a modern touch.





Official Project Name: Harris Co. ESD 9 – Fire Station No. 13

Project City/State: Cypress, TX

Date Completed: July 15, 2018

Fire Chief: Amy Ramon, JD (Cy-Fair FD)

Project Area (sq. ft.): 18,950

Total Cost: \$6,538,886

Cost Per Square Foot: \$345

Architect/Firm Name: Martinez Architects

Website: martinez-architects.com

Design Team: Martinez Architects: Ricardo

Martinez, AIA, LEED AP, Project Manager;

Justin Myers, AIA, Project Designer; MEP

Engineering: DBR; Structural Engineering:

Matrix; Civil Engineering: Jones|Carter;

Landscape Architect: Evergreen Design Group

Station 13 is the new flagship station of the Cy-Fair Fire Department. The five-bay station houses offices, a large training/community room, individual sleeping rooms, open-concept living area, and large exercise area.

The site is located within a Howard Hughes master-planned community with stringent architectural and landscaping requirements that were met through detailed coordination with the Architectural Review Board. Water sustainability requirements were addressed through provision of a separate non-potable irrigation meter for the community's mani-

cured landscape area in the right-of-way. Other climate-appropriate sustainability features include pre-treatment of outside air, ceiling fans, and two distinct insulation systems at exterior walls.

The site constraints dictated a back-in-only apparatus bay design and required detailed coordination with the apparatus manufacturer's turning radius data to keep the roadway clear and promote public safety. Because of the radius of the roadway design, this safety coordination effort included numerous visibility curve studies based on state-published guidelines. Public and secure fire department parking areas are separated by security fencing.

The station is fully fire sprinklered and complies with NFPA 101 (Life Safety Code) and NFPA 1581 (Standard on Fire Department Infection Control Program).



The apparatus bays are accessed through high-speed, side-folding doors and feature a fully automated and hose-free exhaust removal system. The ventilation is aided by large louvers over each bay door tied to exhaust fans, which engage automatically based on exhaust levels.

Apparatus bay support rooms housing equipment such as ice-maker, PPE gear, decontamination fixtures, emergency medical supplies, gear extractor, fill station and compressor for SCBA, and general storage are contained within enclosed, air-flow controlled rooms outside of the designated Hot Zone, including climate control and direct-exhaust design that also prohibits flow of contaminated air from the bay into these rooms. Interior finish materials are durable and anti-microbial, including polished concrete flooring.





Station 9 was the fourth and final facility completed as part of a multi-station project designed simultaneously and constructed with a staggered/overlapping schedule. This station was one of two facilities in the project that shared the same floor plan, which became the precursor to a district standard plan for new stations.

The four-bay station houses a large training/community room, individual sleeping rooms, gender-neutral restrooms, exercise area, and open-concept living area, including covered outdoor patio. Several design elements were incorporated to encourage community and interaction within each shift or com-



pany; sleeping areas kept to minimal size and grouped into pods; common areas expanded; and report writing stations integrated into common areas.

The site presented two main challenges for the project and desired program. First, the authority having jurisdiction changed its storm water detention rules—in response to widespread flooding from Hurricane Harvey—just prior to the project being permitted. To keep the project moving with the overall schedule, the design team incorporated an underground

storm water detention “pond” under one of the already designated parking areas. The second challenge was to fit the program on a narrow site. Numerous site and building layouts were explored attempting to meet the needs of the department within the site constraints. These explorations led to the final solution of the design team assisting the fire department to acquire an adjacent abandoned roadway, in coordination with the neighboring property owners, to provide the land area needed for the desired program.

The apparatus bay features a fully-automated and hose-free exhaust removal system to remove harmful gases. Additionally, high-volume, low-speed fans encourage airflow to improve the thermal comfort against the region’s humid climate. The PPE room features direct exhaust and appropriate air pressure design, which further aids in the health-promoting measures considered in the facility’s design.

Official Project Name: Harris Co. ESD 9 – Fire Station No. 9
Project City/State: Cypress, TX
Date Completed: November 15, 2018
Fire Chief: Amy Ramon, JD (Cy-Fair FD)
Project Area (sq. ft.): 16,902
Total Cost: \$7,227,098
Cost Per Square Foot: \$428
Architect/Firm Name: Martinez Architects
Website: martinez-architects.com
Design Team: Martinez Architects: Ricardo Martinez, AIA, LEED AP, Project Manager; Justin Myers, AIA, Project Designer; MEP Engineering: DBR; Structural Engineering: Matrix; Civil Engineering: Weisser; Landscape Architect: Evergreen Design Group





Station 52 is the result of a unique collaboration between three emergency response entities, providing accommodations to Montgomery County ESD 3 (neighboring fire district) and Montgomery County Hospital District (overlapping EMS provider), in addition to Montgomery Fire Department (MCESD 2).

The floor plan is efficiently organized to provide visual access, supervision, and proximity from the officer's quarters to the living area, training room, building entrance, and apparatus bays. Individual sleeping areas and exercise room are provided with operable windows for use during the days with lower humidity than normal for the Southeast Texas region. Natural daylight is abundant throughout, including less common areas such as the kitchen pantry hallway, restrooms, and utility rooms. Other floor plan features include a large covered patio



area providing shared access to both the kitchen/dining area and the exercise room, and a training room with public access through a secure vestibule for use by the community.

A half-length bay allows efficient use of space for additional programs rather than over-sizing the apparatus bay area. A rectangular layout provides a cost-effective approach to the pre-engineered metal building structure. Workstations for report writing are integrated into common areas. Apparatus bay exhaust is provided via in-line exhaust fan and louvers with motorized damper.

The site presented some unique situations requiring design solutions. First, the back portion of the natural site had a steep downward slope, but this was also the area needed for a storm water detention pond. The design solution was to provide a built-up pond, rather than a dug-down pond. Also, the front apron

Official Project Name: Montgomery Fire Station No. 52

Project City/State: Montgomery, TX

Date Completed: December 21, 2018

Fire Chief: Brian Edwards

Project Area (sq. ft.): 9,125

Total Cost: \$3,090,308

Cost Per Square Foot: \$339

Architect/Firm Name: Martinez Architects

Website: <http://martinez-architects.com>

Design Team: Martinez Architects: Ricardo

Martinez, AIA, LEED AP, Project Manager;

Justin Myers, AIA, Project Designer; MEP

Engineering: Roco Engineering; Structural

Engineering: Matrix; Civil Engineering:

Morales & Associates; Landscape

Architect: Evergreen Design Group

and driveway paving had to be coordinated with a future expansion of the roadway. The site does not have public sanitary sewer service, so provisions were made for an on-site aerobic septic system with leach field.



Official Project Name: Nokesville Volunteer Fire & Rescue Station 5
Project City/State: Nokesville, VA
Date Completed: June 15, 2019
Fire Chief: Mike Silva
Project Area (sq. ft.): 18,233
Total Cost: \$6,925,275
Cost Per Square Foot: \$380
Architect/Firm Name: HG Architects
Website: hgaarch.com
Design Team: HG Architects: J. Lynn Reda, Principal; Eliel Alfon, Principal; Joe Saunders, Project Manager; Civil Engineering: Adtek Engineers; Structural Engineering: Ehlert/Bryan; MEP Engineering: GPI

Nokesville Fire Station 5 was originally constructed in 1967 and subsequently added to over time. Significant development in western Prince William County, along with inadequate spaces for staff, prompted the replacement of the station. The design of the new station needed to respect several constraints including wetlands, an established cell tower, and the requirement that the existing station remain operational throughout construction. The new facility provides expanded office and residential spaces for volunteer and career staff, a training tower, and larger space for apparatus and associated support.

Nokesville is traditionally a farming community. The agricultural aesthetic of the station design reflects this origin, allowing the mass of the 18,233-square-



foot facility to be broken into smaller forms more in keeping with the surrounding structures. The new community room features an entry independent of the station, as well as dedicated parking.

One of the primary issues of the original station was its proximity to the road. The aprons were minimal, and the back-in nature of the bays necessitated traffic be stopped in order to maneuver into the bays. Maintaining an operational

station during construction allowed for the placement of the new building to be set back further from the road. A bailout-lane accesses the rear apron by way of an existing logistics storage building; the rear of the station can also be accessed through the parking lot.

There is no public water to the site; the station has a well. The station



is not sprinklered. Additional measures were included to enhance the safety of the facility. Each of the sleeping rooms are separated by a one-hour rated partition and there are exits direct to the exterior from within the dormitory corridor.

The station is designed for future expansion of the offices, dormitory and community hall.



SAVE THE DATE



TRAINING STARTS HERE

FIREHOUSE EXPO[®] JULY 21-25, 2020

MUSIC CITY CENTER, NASHVILLE, TN | FIREHOUSEEXPO.COM

Owned and Produced by:



Presented by:

FIREHOUSE

Request information at firehouse.com/10832870



Beachwood Public Safety Center is a new mixed-use public safety facility that combines the four-bay Fire Station 2 with a 911 dispatch center, police office, EOC/training room and firefighter training facility. The 27,000-square-foot facility is organized around a two-story lobby that identifies the entrance from the main road and provides direct, secure access to the multiple user spaces. The lobby includes a 9/11 Steel Memorial that serves as a reminder of the heroism and sacrifice of our nation's first responders.

Firefighter response time, health/safety and practical training were priority considerations that shaped the design and layout of the station. The residential and operational spaces are located on the first floor along a central corridor that



provides a safe and direct response path. Hot Zone design principles are applied in the fire station bays and decontamination spaces, and a single-bay door at the side of the station is designated as the vehicle

return and decontamination entrance. A two-story exercise room provides space for a wide variety of cardio and strength training exercises. Practical training facilities are located at the rear of the



Beachwood Public Safety Center Fire Station 2

BEACHWOOD, OH

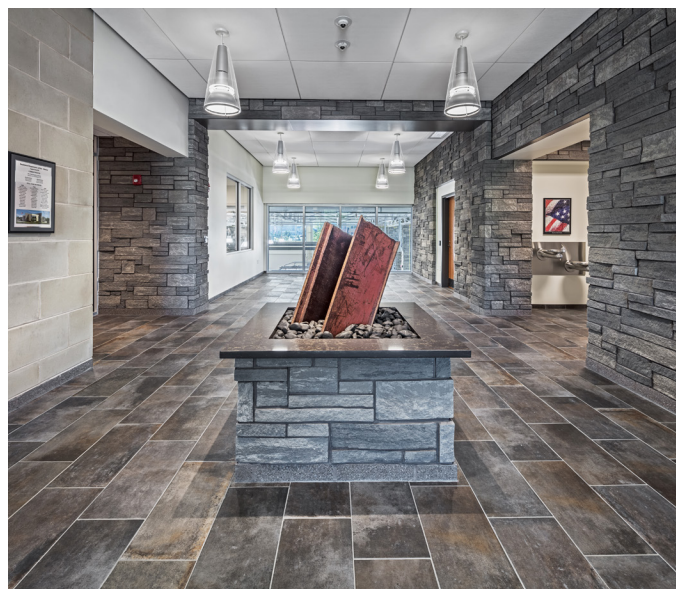


center that would strengthen the partnership of the fire and police departments and would provide an opportunity to provide improved dispatch and EOC capabilities. The 911 dispatch center and police office share a suite at the front of the building with secure access from the lobby. The EOC/training room is a multipurpose space located on the second floor above the dispatch center that can serve as the city's emergency operations center during crisis situations or as a large training room for any of the city agencies.

Official Project Name: Beachwood Public Safety Center, Fire Station 2
Project City/State: Beachwood, OH
Date Completed: August 21, 2018
Fire Chief: Steven Holtzman
Project Area (sq. ft.): 27,000
Total Cost: \$9,696,000
Cost Per Square Foot: \$359
Architect/Firm Name: LeMay Erickson Willcox Architects
Website: lewarchitects.com
Design Team: Architect: LeMay Erickson Willcox Architects; Civil, Structural, Mechanical, Electrical, Plumbing, Cost Estimating: AECOM

building and include a four-story training tower with exterior balconies, an open interior stairwell, and adjacent roof levels to create a variety of training scenarios.

The city leadership, fire chief and police chief strongly valued the opportunity to provide a mixed-use public safety





Official Project Name: Fire Station 2
Project City/State: Prosper, TX
Date Completed: October 10, 2016
Fire Chief: Stuart Blasingame
Project Area (sq. ft.): 16,200
Total Cost: \$6,326,000
Cost Per Square Foot: \$390
Architect/Firm Name: Brinkley Sargent Wiginton Architects
Website: bsw-architects.com
Design Team: Brinkley Sargent Wiginton Architects: Architect (programming, design, interiors); MEP: MD Engineering; Structural: Half Associates; Civil: Teague Nall and Perkins

All eyes were on this 16,200-square-foot fire station for the town of Prosper, which was designed to set the standard for development in the area. The exterior styling and materials of brick, stone and stained cedar were chosen to give the project a warm, inviting look and to enhance the future residential development near the site.

Visible from every angle, the lobby

tower rises above the rest of the building and is a beacon for the city. The lobby, accentuated by the high volume, windows and acoustic panels, provides access to the 24-person training classroom and the watch room via a transaction window. The watch room is also visually connected to the bays and front drive.

The common space utilizes a great room configuration with the kitchen

and dining rooms connected by a high volume and architectural wood trusses. The kitchen with solid-surface counters, full-height backsplash, serving bar, deep sinks, high-end appliances and individual

shift pantries accommodates cooking for 10 firefighters. The day room is across the hall but visually connected, separated only by a low wall. A stone feature wall in the day room includes a fireplace, cast-stone hearth, and a natural log mantle. The patio is surrounded by a stone planter wall and is covered by a roof with stained cedar decking and trusses. The living accommodations include private dorm rooms, single user toilet facilities, and two officer quarters suites.

The three 70-foot drive-through bays feature wood-look, four-fold doors and high windows for increased daylight in the space. A training mezzanine accommodates indoor ladder, rope and confined space training. Support spaces include fitness, PPE storage, decontamination/extractor room, work room and SCBA maintenance room. The building also includes a remote police substation complete with a report room, shower room, break area and vehicle bay.





Official Project Name: Fridley Public Safety Campus
Project City/State: Minneapolis, MN
Date Completed: October 1, 2018
Fire Chief: John Berg
Project Area (sq. ft.): 184,300
Total Cost: \$44,520,325
Cost Per Square Foot: \$242
Architect/Firm Name: BKV Group
Website: bkvgroup.com
Design Team: Chief Berg; Public Safety Director Weierke; Scott Hickok; Walter Wysopal; Bruce Schwartzman; DuWayne Jones; David Horner; Aaron Johnson; Michael Healy; Craig Carter; Kyle Olson; Jonathan Butler-Knutson; Claire Rozman; Josh Ortmann; Chad Kurdi; Mike Dugan; Myron Jordan; Ryan Fitzgerald; David Jacobsen; Brady Halverson; Mark Redmann; Ed Heinen; Alex Hoffman; Jared Ward

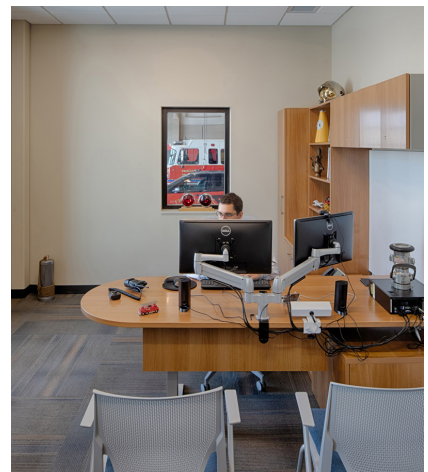
On a high-visibility site along a heavily traveled road and adjacent to the wooded trails of Rice Creek, stands the recently completed Fridley Public Safety facility, City Hall, and Public Works. The design responds to its urban and natural surroundings with a palette of stone, brick, metal, wood and glass. Brick and metal volumes define the site's urban boundaries on the north and west while the south and east facades are glassy and broken into smaller elements to respond to a plaza, water fea-

tures, investigations and patrol spaces are located on the first floor.

There are dual three-bay drive-through apparatus rooms. In between is the watch room and other apparatus bay support spaces. Above the support functions is a large room for mazes and props to provide on-site training opportunities.

The lower level is dedicated to police and contains a squad garage, a small holding area, evidence processing and storage and a five-lane firing range.

The second floor contains the fire



ture and wooded landscape beyond. The civic buildings will be a central feature in a larger project that includes urban-scale multifamily and senior developments.

The Public Safety Department is located across the main lobby from the City Hall functions. A smaller sub-lobby serves fire and police office areas. Restrooms and small conference spaces are shared while coffee alcoves and copy rooms, where sensitive information might be printed, are separate. All personnel spaces, including administration,

station kitchen, dining area, day room, lockers and showers, and bunk rooms for the duty crews. Two stairs are available for response and a fire pole provides direct access to the apparatus bays. Past the secure fire station perimeter lies a fitness room available to all city employees and a shared training room also used as an EOC.





Official Project Name: B.U.G. Fire Department
Project City/State: Brussels, WI
Date Completed: July 1, 2018
Fire Chief: Curt Vandertie
Project Area (sq. ft.): 17,989
Total Cost: \$2,700,000
Cost Per Square Foot: \$150
Architect/Firm Name: Keller, Inc. – Steve Klessig (V.P. of Architecture and Engineering)
Website: kellerbuilds.com
Design Team: Architect: Keller, Inc.; Structural Engineer: Integrity Engineering & Design, LLC; HVAC & Plumbing Design: Southport Commercial HVAC, Plumbing, & Fire; Electrical Designer: Hanson Design Group

This project was more than six years in the making and required two different referendums between three communities, three town boards and required approval from many residents. After all this collaboration, Brussels-Union-Gardner Station 1 (B.U.G.) became a reality. Located in the southern part of Door County, B.U.G. protects and serves 92 square miles of land, 117 miles of coastal waters, 3,300 residents and more than 2 million visitors throughout the summer months.

B.U.G. is a representation of community, teamwork and the feeling of home. With more than 50 volunteer firefighters, members of the B.U.G. team knew that they were outgrowing their space.

After a collaborative and thorough needs assessment with the architect, together we created an energy-efficient facility while keeping the health and safety of the firefighters top-of-mind. The new facility includes designated areas for the safe keeping of equipment, a large gear storage area, storage space, laundry area, mezzanines on both sides of the apparatus bays that are used for hose drying, training, and fitness equipment, space for dual primary response equipment, living quarters with a full kitchen, a modern training room that not only allows space for lectures and training exercises for all team members, but it is also a meeting space for the community, and a location for EMS classes with Northeast Wisconsin Technical College. The facility is primarily for the firefighters, but a portion of the facility is shared with Door County EMS.

Throughout the process of building B.U.G, it was very clear that

it was a community-driven project. Businesses from more than 50 miles away donated vehicles and trailers, residents donated furnishings and artwork used throughout the facility, and 76 percent of the land acquisition costs were covered by grant money and anonymous donations.

B.U.G. is truly a one-of-a-kind fire station.





Official Project Name: Cambie Fire Hall No. 3 and Ambulance Services
Project City/State: Richmond, BC, Canada
Date Completed: April 27, 2017
Fire Chief: Tim Wilkinson
Project Area (sq. ft.): 26,000
Total Cost: \$16,000,000
Cost Per Square Foot: \$615
Architect/Firm Name: DGBK Architects, Additional Firms: Assembly Architecture (Now S2 Architecture)
Website: s2architecture.com
Design Team: Assembly Architecture (now S2 Architecture): Robert Lange, Principal; DGBK Architects: Amy Cheung, Senior Architect; Peter Sickert, Associate; Walter Dales, Senior Technologist; Kevin Leung, Technologist; Stephanie Matkaluk, Intern Architect, Interior Designer, BAID; Larry Mac, Intern Architect; S2 Architecture: Linus Murphy, Principal

The new fire hall is the first combined urban fire and ambulance station in British Columbia. The facility consists of two bays for ambulance vehicles, two bays for fire rescue vehicles, two emergency vehicle technician bays and support spaces include recovering rooms, training classrooms, administrative spaces, kitchens and exercise space.



This project represents the type of design response we are passionate about. The term response being fundamental to providing the client with a solution that satisfies their functional and operational needs but does not lose sight of design integrity.

As a fire station, the building has very specific functions that are critical and measurable. As a building, it must fulfill additional, more notional concerns. The design fulfills the practical functions of fire response, firefighter training and

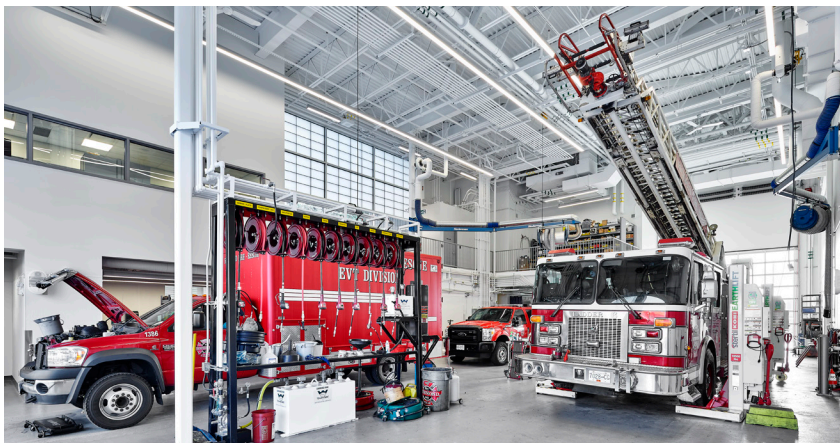
provision of a comfortable living and working environment where inhabitants spend a good part of their day and night. It seeks to do this in a way that is not pretentious, not superficial and not exorbitant. It solves the functional criteria with a practical approach.

As a building that carries the responsibility of providing a neighborhood service, the design was also crafted around issues we felt were important to the



representation of the building. These included: security; safety; standing as beacon and anchor for the neighborhood; and expressing its purpose.

The design acknowledges the representational language of a fire station but attempts to reinvent and reinterpret this. Visibility is used to provide views of the fire apparatus, and truck bays, the clearest and most compelling representation of the building's purpose. The building looks out over the neighborhood to provide a sense of protection. The design evolved from a response that listened carefully to the client's needs and provided an architectural expression that was rooted in a concern for the quality of the built form.





The new, state-of-the-art Mount Horeb Area Public Safety Building unites the Mount Horeb Area Joint Fire Department and the Mount Horeb Police Department in one facility. Layout and design of the building considered both individual department needs and multi-purpose solutions to maximize efficiency and accessibility throughout the building.

The fire department was designed to minimize response time and get staff to the scene of need as quickly as possible. The two-story wing offers two stairway entry points and a fire pole, getting firefighters from bed to engine in less than 30 seconds. A five drive-through-bay garage supports all fire apparatus along with full sight lines to apron and bay from dispatch.

The fire department wing was designed with education and training



for both departments in mind. A large, shared training classroom with adjacent storage, along with a conference room and study room, allows for flexible hands-on instruction. Other amenities include a kitchen/dining area, bedrooms and lounges.

The facility was designed to allow multiple training opportunities indoors and out, including: a window directly off the bay for bailouts; removable railings on the mezzanine for in ladder operations; on-site fire training structure for search, rescue and live burn training, and police breach and clear training;



and hydrants at the rear of the building for practice in water supply operations.

The building also offers accessibility and security features for emergency scenarios, including: shared educational space to serve as emergency operations center (EOC) and designed for full operation during emergency or lockdown; EMS treatment room; and zones for decontamination and containment of workplace hazards with ventilated gear room.

The combined building reduces cost and waste and creates an inherent connection between the city's public safety departments.

Official Project Name: Mount Horeb Public Safety Building

Project City/State: Mount Horeb, WI

Date Completed: April 22, 2019

Fire Chief: Jenny Minter

Project Area (sq. ft.): 49,035

Total Cost: \$11,106,702

Cost Per Square Foot: \$227

Architect/Firm Name: Bray Architects

Website: brayarch.com

Design Team: Bray Architects: Michael A. Hacker, AIA, NCARB, LEED AP, Architect, Associate; Nate Considine, AIA, Architect; Chris Eger, LEED AP BD+C, Project Team Leader; Maria Welch, Project Team Leader





Located on the coast of South Carolina, this facility was designed to complement the surrounding low-country aesthetic, and many of the materials and building forms are designed to reflect the surrounding buildings and upscale homes. This was accomplished by featuring an all-brick masonry façade beneath a sharply pitched asymmetrical shed metal roof. All-glass bay doors provide the community a full view of the fire apparatus. Additionally, much effort was made in the preservation and supplementing of the natural site vegetation.

The interior was designed to be warm and comfortable for the firefighters, including a two-story tall day room and kitchen area that incorporates several clerestory windows. These windows, in addition to the numerous solar tube



fixtures throughout the station, allow for much desired natural lighting.

Station 6 also includes a physical training room, individual bunkrooms, private bathrooms, and a fire officer's suite. More utilitarian components of the station include a decontamination room, a compressor room and a storage mezzanine. All with direct access to the apparatus bays. Additionally, Station 6 was designed to allow for expansion of the

apparatus bays as well as the bunk rooms in the future.

This facility was designed before the prominence of including Hot Zones. However, it does include dedicated turnout gear storage and extractor rooms that are separated from both the apparatus bay and living quarters.

An inconspicuous exterior entry provides separate access to a Police Substation Suite. This suite provides a uniquely private, unmarked area for police officers to operate daily and nightly without interrupting the firefighters. The Police Suite includes an open office with individual workstations, a shift supervisor's office, and a bathroom.

This project had a great emphasis on sustainability including features like increased insulation values, rubberized flooring with a high recycled material content, and enhanced lighting and HVAC controls.



Official Project Name: Mount Pleasant Fire Station 6
Project City/State: Mount Pleasant, SC
Date Completed: November 1, 2016
Fire Chief: Mike Mixon
Project Area (sq. ft.): 9,300
Total Cost: \$2,600,000
Cost Per Square Foot: \$280
Architect/Firm Name: Stewart-Cooper-Newell Architects
Website: fire-station.com
Design Team: Stewart-Cooper-Newell Architects: Ken Newell, AIA, Principal-in-Charge, Lead Design Architect



The city of Windom, MN, was in need of additional space to house all their fire apparatus and ambulance vehicles in a single public safety building. Their fleet had grown over the years and as a result the department was forced to keep various response

tunity to maximize on shared spaces when plausible to respect a tight budget of under \$170 per square foot.

The building includes a shared lounge area, sleeping quarters, multiple private offices, storage rooms, toilet rooms and showers, large meeting/train-



vehicles in multiple locations. The need to house all of the apparatus and emergency vehicles in one location was critical to assure residents adequate response times required by NFPA 1710 standards. The architects designed the city's new 19,537-square-foot Emergency Services Building to include space for both fire and ambulance crews and took every oppor-

ing room suitable for 50 people, kitchen, apparatus bays for 10 fire apparatus, garage space for three ambulances, a dedicated wash bay, SCBA room, hose drying tower, and several other amenities.

The building's design focuses on providing spaces that can not only be shared between the ambulance crews and firefighter personnel but was also designed



Official Project Name: Windom Emergency Services
Project City/State: Windom, MN
Date Completed: April 1, 2016
Fire Chief: Dan Ortman
Project Area (sq. ft.): 19,537
Total Cost: \$3,200,000
Cost Per Square Foot: \$164
Architect/Firm Name: Brunton Architects & Engineers
Website: bruntonarchitects.com
Design Team: Architectural & Mechanical Engineering: Brunton Architects & Engineers; Electrical Engineering: Abacus Engineering (Formally Bark. L Consulting Engineers); Civil Engineering: Bolton & Menk; Structural Engineering: Albertson Engineering Inc.



to encourage interactive training between departments as well. To support those training requirements, the hose tower was designed not only for drying hoses after an event but also for specific training events. Firefighters can perform hose drag drills, perform search and rescue, practice mechanical advantage raising and lowering, and rappelling down from the upper stair access to the working level of the platform to simulate multiple story rescue exercises, among other activities.

The precast concrete building is comprised of wall panels that borrow not only color and materials from the surrounding neighborhood, but also from the historic nature of the community as well.



The Setauket Fire Department's Headquarters Building was built in the 1930s and is nestled in the historic district of Setauket. While the Volunteer Fire Department had been operating out of this existing station for close to 90 years, spatial limitations, safety concerns and deterioration would make it difficult to accommodate the new growth of the community and department.

For over a decade, the district's proposals for a renovated firehouse were rejected due to a lack of community input. In the early 2010s, the district engaged the community to be involved in the design, learning that maintaining the historic



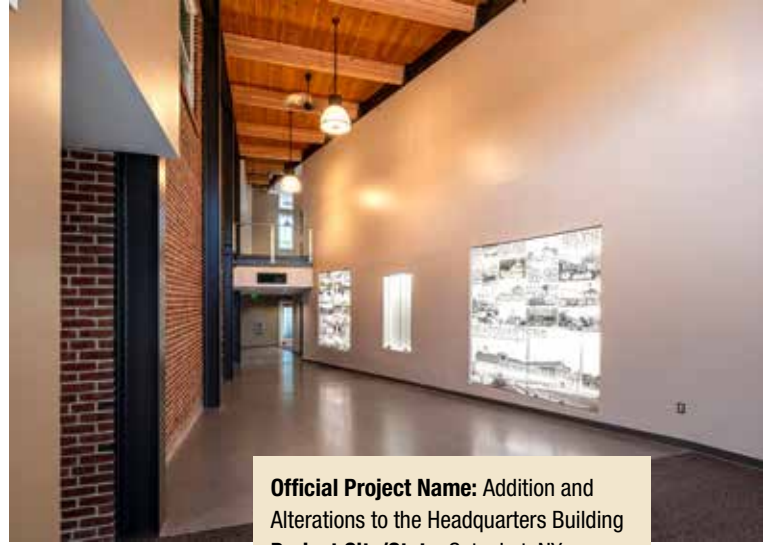
aesthetics of the exterior was a top priority for most people.

Designing this renovation would prove to be very challenging. In order to maintain the department's operations during construction, we had to design a project to be built in phases. Furthermore, the response path from exiting out to Main Street had to be changed to exit out to Old Town Road, which meant the design needed to incorporate varying floor elevations that not only tied the existing facility together, but responded to the site constraints.

After two phases of construction, an existing portion of the building encapsu-

Setauket Fire Department Headquarters

SETAUKET, NY



Official Project Name: Addition and Alterations to the Headquarters Building
Project City/State: Setauket, NY
Date Completed: May 24, 2019
Fire Chief: District Manager David Sterne
Project Area (sq. ft.): 25,950
Total Cost: \$14,600,000
Cost Per Square Foot: \$562
Architect/Firm Name: H2M Architects + Engineers
Website: h2m.com
Design Team: H2M Architects + Engineers: Jessica Freitag, Project Designer; Scott Lehn, Department Manager; James Williamson, Sr. Project Engineer; John Muratore, Sr. Project Engineer; Anthony Kim, Sr. Project Engineer; Charles Beckert, Assistant Vice President

lated by brick from the original exterior remains intact through the interior of the building. This brick is a reminder of the past and a bridge to the future, incorporating the old and new, highlighting the department's commitment to the community and their 110 years of service.

The final design is a 25,950-square-foot, two-story facility incorporating sustainable materials and comprised of new apparatus bays, training props, bunk rooms, administrative offices, conference rooms, training room, a community meeting room, community memorial plaza and a main corridor that pays respect to the department's history.



Hartford Fire Station has served Maine's capital city for nearly a century from a hilltop overlooking the downtown. Designed back when firefighters were still using horse-drawn water pumps, the station's infrastructure was failing under the weight of modern fire engines, which barely fit inside the apparatus bay doors. In 2016, Augusta voters approved \$6 million to bring this important resource up to today's standards.

The solution was an 11,325-square-foot addition along with a major renovation of the original 8,800-square-foot



existing fire station. The team reconfigured the design and put all critical uses into the new addition, technically a separate building, allowing Tier II standards on the 1920 wing of the facility.

The renovated original structure still provides many important functions, includ-



Official Project Name: Hartford Fire Station

Project City/State: Augusta, ME

Date Completed: May 24, 2019

Fire Chief: Roger Audette

Project Area (sq. ft.): 20,125

Total Cost: \$6,023,031

Cost Per Square Foot: \$299

Architect/Firm Name: WBRC Architects Engineers

Website: wbrcae.com

Design Team: WBRC Architects

Engineers: Mathew Ward, Project

Architect/Project Manager, Rob Frank,

Principal-in-Charge; Mitchell Associates

Architects: Bob Mitchell, Fire Station

Design Consultant. Ames Associates:

Original concept/bridging documents;

Engineering: civil, mechanical, and

electrical by WBRC; structural by Becker/

Thornton-Tomasetti. Construction:

Nickerson & O'Day.

Classical Revival structure. The new two-story, fully accessible expansion provides a six-vehicle, drive-through apparatus bay with a tail-pipe exhaust system, decontamination area and rigorous Hot Zone/Cold Zone separation. The second-story living quarters offer a roomy kitchen/day room, fitness room, bunk rooms, personal laundry and dedicated storage—all isolated from, yet quickly accessible to, the new apparatus bay.

The renovation of the 1920 portion of the building was threatened by the cost of foundation reinforcements required to meet essential facility standards for an

ing a four-door apparatus storage bay for backup equipment and the station's prized antique fire truck. Its second floor has administrative offices, large training room with kitchenette, unisex restrooms, conference room and display space for historic memorabilia. Scope of work included a complete rebuild of the apparatus bay floor, all new MEP systems, many new windows, and additional insulation, making the 1920 building significantly more energy efficient. The entire site and parking lot were also reconfigured and expanded, adding more parking and a secure back entrance.



The iconic Central Fire Station is located on a prominent corner in the downtown Wyandotte Central Business District. The two-story building, with basement, was built in 1939 and has served the community for 80 years. Throughout this time, however, the building itself received minimal maintenance and the infrastructure that

once supported its crew members was falling into disrepair and in desperate need of crucial upgrades.

In 2016, a master plan convinced city leadership that a complete restoration of the building was feasible and provided the best value for the community. At the same time, the project introduced a logistical challenge. Since the city of Wyandotte is bisected by railroad tracks, an active station on either side of the tracks was required. As a result, temporary housing for the firemen was erected on site while the fire trucks and ambulance remained in the building during construction. The apparatus bay floor required reinforcing to support the load of a 35,000-pound fire pump truck. The challenge was installation of multiple steel columns and beams with limited access to the basement. The building required extensive upgrades to its lighting, mechanical, electrical and plumbing systems.

Three seamless additions to the first floor fulfilled critical needs that were lacking, including an improved public entry with ADA access, meeting room, enlarged kitchen/dining area, workshop and various storage rooms. The recon-

figured second floor included shifting from large communal sleeping areas and bathrooms to partitioned sleeping areas and individual bathroom compartments, which increased privacy and provided accommodations for a mixed-gender department.

The historic character of the building was restored to include new windows to replicate the originals, new enlarged bi-fold apparatus bay doors, significant masonry tuckpointing and new roofing. Site redesign provided the ability for 360-degree drive access as well as visitor and ADA parking.

Official Project Name: Wyandotte Central Fire Station Renovation
Project City/State: Wyandotte, MI
Date Completed: March 1, 2019
Fire Chief: Chief Jeff Carley (retired), Chief Dan Wright (current)
Project Area (sq. ft.): 13,200
Total Cost: \$2,600,000
Cost Per Square Foot: \$195
Architect/Firm Name: Thomas Roberts Architect
Website: thomasrobertsarchitect.com
Design Team: Thomas Roberts Architect: Thomas Roberts, AIA, Principal in Charge; Wayne Dutton, Architect, Project Manager; Structural: AE Structures; Mechanical/Electrical/Plumbing Engineers: System Solution Engineering; Civil: Hennessey Engineers Inc; General Contractor: MiG Construction; Owners Representative: Mark Kowalewski, PE, City Engineer



For this new joint fire department and EMS station in the Onion Creek neighborhood of Austin, it was important from the beginning for the community to embrace their new civic facility. Beginning in the pre-design phase, the design team worked closely with fire department staff to evaluate the city's existing, standard fire station floor plan and to improve upon the functionality of its design. From there, an open house was hosted to give community members the opportunity to comment on the station's design, and to encourage their input on the architecture of their new neighbor.

In keeping with the city of Austin's efforts to promote environmentally conscious lifestyles, the fire station is designed to be LEED Silver certified, with features



Austin Onion Creek Fire & EMS Station

AUSTIN, TX



such as a rainwater collection cistern, bike racks and recycling carts. It is also part of the “Art in Public Places” program, giving the design team the opportunity to work with a local artist, and resulting in a unique, fire station-themed art installation.

The new 9,812-square-foot station sleeps 16 and has three apparatus bays, one of which is a double-deep, pull-through bay. Since two separate emergency service providers, Austin Fire Department and Travis County EMS, will be calling this

new station home, the station was designed to include separated sleeping areas while allowing the staff from both departments to jointly use the main common areas. The central core of the station is made up of an open-concept living/kitchen/dining area and is protected from dangerous contaminants in the apparatus bay by two air locks. Open input from the users, the owner, and even the citizens, has resulted in a one-of-a-kind station that fulfills all its users’ needs.

Official Project Name: Austin Onion Creek Fire & EMS Station
Project City/State: Austin, TX
Date Completed: March 28, 2019
Fire Chief: Joel Baker
Project Area (sq. ft.): 9,812
Total Cost: \$4,882,082
Cost Per Square Foot: \$498
Architect/Firm Name: Brown Reynolds Watford Architects, Inc.
Website: brwarch.com
Design Team: BRW: Ray Holliday, AIA, Principal; Lisa Anel, Project Manager; Madelyn Walker, Designer; Peri Sutton, LEED Coordinator; Jorge Olivares, MEP PE, Jose I. Guerra, Inc.; John King, Civil PE, Chan & Partners Engineering, LLC.; Stephanie Tsen, Structural PE, JQ + Tsen, LLC.; Aan Coleman, Landscape, Coleman & Associates



The growth of Elk Grove Village (EGV), a Chicago suburb housing North America's largest industrial park, is fueling a \$110 million infrastructure investment, including stronger fire protection. In 2019, EGV celebrated the opening of Fire Stations 8 and 10. Fire Station 8 (FS8) is a new facility that combines two companies serving an expanded response area. The design for FS8 addresses two critical challenges: on-site facilities for advanced training and ensuring the safety/well-being of firefighters.

FS8 features a four-story Class B tower that uses natural gas for scenario-based training. Movable interior walls and burn props help simulate temperature and smoke, including kitchen and bedroom



carcinogens brought back from fires. An infrared heat sauna equipped with stationary bikes helps firefighters sweat off harmful toxins.

The firm incorporated WELL Building standards into other aspects of FS8's design, emphasizing natural light, ventilation and physical comfort, all of which contribute to preparedness and productivity. When the apparatus bay doors are open, a mesh screen is lowered allowing the free flow of air and light while maintaining station security.

Inside the station, a multi-purpose room is used for both training and community meeting space. The living quarters include comfortable seating in various configurations for private activities and group interactions. The layout of the kitchen/dining areas promotes camaraderie while bunk rooms feature acoustical panels for sound control and ambience. Throughout the station, wood and color accents provide warmth balanced with durability. EGV's civic pride is prominent with a lobby featuring a stately elk and hallway graphic featuring the community's fire and EMS vehicles.

fires. The tower's height facilitates ladder and rappelling drills while the stairs inside are used for both hose training and physical exercise.

FS8's four-door apparatus bay includes an enclosed Hot Zone with showers, laundry and extraction equipment to contain



Official Project Name: Elk Grove Village Fire Station No. 8
Project City/State: Elk Grove Village, IL
Date Completed: May 15, 2019
Fire Chief: Richard J. Mikel
Project Area (sq. ft.): 20,000
Total Cost: \$10,900,000
Cost Per Square Foot: \$545
Architect/Firm Name: FGM Architects Inc.
Website: fgmarchitects.com
Design Team: Ray Lee, Principal-in-Charge; Jason Estes, Project Manager; Louise Kowalczyk, Project Designer; Annabella Orlando, Project Architect; Maggie Krieger, Project Architect; Katherine Kimel, Specifications; Raegan Porter, Interior Designer; Steve Welter, Landscape Architect



Official Project Name: Burlington Fire Station #2

Project City/State: Burlington, MA

Date Completed: June 26, 2019

Fire Chief: Steven Yetman

Project Area (sq. ft.): 15,878

Total Cost: \$7,050,000

Cost Per Square Foot: \$444

Architect/Firm Name: Context Architectural

Website: contextarc.com

Design Team: Architectural: Jeff Shaw, AIA, LEED AP BD+C, Principal-in-Charge; Chris Logan, AIA, Project Manager; OPM: Cardinal Construction; Structural: Becker Structural Engineers; MEP/FP: GGD Engineers; Civil: Howard Stein Hudson Engineers; Landscape: CBA Landscape Architects; Cost: AM-Fogarty & Associates

Burlington's Fire Station No. 2 replaces an existing single-story, two-bay station on Terrace Hall Avenue in the southern section of Burlington.

The new station is a 15,878-square-foot facility that houses three shifts of eight fire fighters as well as administrative and training officers. The apparatus room contains three double-deep bays as well as support spaces. The firefighter living quarters contain single dorm rooms, a study, three single-user toilet/shower rooms, an open kitchen/dining room with an outdoor patio, a day room, and a large fitness room. The station also includes many interior and exterior training features such as a large indoor training room, a training hole for confined lowering/lifting practice, a three-level training tower, a training bay off a paved exterior training platform that will also be used for high-ladder rescue training, rappelling and hoisting operations.

Designed for simplicity and durability, the exterior materials, colors and pat-



terns reflect the use of the spaces within the building. The apparatus room is constructed entirely of masonry. The exterior is charcoal brick veneer above a pre-cast base and a painted concrete block on the interior. The administration/firefighter

portion of the building is a steel frame structure with a brick veneer and pre-cast base and metal panel cladding above. The colors of the station are beige, red, charcoal and black, symbolic of the colors found on the fire apparatus and the seal of the Town of Burlington.

Besides the use of sustainable materials on the exterior and interior of the station, the mechanical, electrical and plumbing systems recapture heating and cooling, minimize the use of water consumption and the power usage is greatly reduced by the installation of sensors and LED lighting. These measures and practices are in keeping with the mission of the Burlington Fire Department.





The City of Aurora Fire Department was in need of replacing their outdated 1950s Fire Station No. 7. The existing station needed to be replaced for a couple reasons. The most important reasons are that this station needed to house a new ambulance and crew to serve the community and the existing station could not accommodate the back-up ladder truck in the existing apparatus bay. Additionally, firefighter safety and health considerations were given to the new facility to create a safer working environment for the firefighters such as providing a fitness room that is not in the apparatus bay, sepa-



Official Project Name: Aurora Fire Station No. 7

Project City/State: Aurora, IL

Date Completed: June 1, 2018

Fire Chief: Gary Krienitz

Project Area (sq. ft.): 10,170

Total Cost: \$4,000,000

Cost Per Square Foot: \$393

Architect/Firm Name: Dewberry

Website: dewberry.com

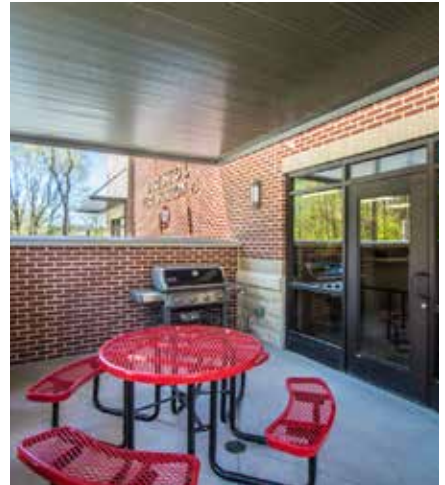
Design Team: Dewberry: Jonathan Tallman, PM; Weena Yan, Architect Intern; Jason Soucie, Structural; Roger Beard, Electrical; Cathy McNeil, Plumbing; Tom Veerman, Mechanical; Beth Keppler, Interior Designer; Mike Haywood, Civil; RC Wegman Construction Company: Terry Bohr, President; Terry Sowers, Estimator; Butch Distajo, PM; Landscape Architect: Hitchcock Design Group: Tim King; Mike Wood

rated gear storage from the apparatus bay, and providing work flow so that firefighters are keeping fire contaminants within the apparatus bay and gear storage spaces



and not tracking their gear through the living side of the station.

Located in a residential neighborhood and across the street from Lincoln Park, the scale of the station in relation to the adjacent homes was a concern from the neighbors. Through design meetings with the city review board, residential neighbors to the site and fire department, the architect arrived at the final design of the exterior. Through the use of shed roofs, the design directly responds to the issue of scale related to the homes near the fire station by keeping the lower roof areas closer to the homes and the higher roof areas stretching out toward the park. The use of heavy timber wood structure, stone based and fiber cement board wood-look siding all contribute to the design of the station drawing the design inspiration from nature.



Fire Station #5 is the first station built in Bristol in more than 55 years. Stewart-Cooper-Newell Architects and Bristol-based Thompson & Litton worked side-by-side with the city on this important project.

The focus and design intent was to blend the station with the new mixed-use development adjacent to the site, including a twist of modern materials and a contemporary style.

The interior was designed to be warm and comfortable for the firefighters. A trendy dayroom provides living space for crew members, along with an adjacent kitchen, which connects to an inconspicuous outdoor patio. Station #5 has four sleeping quarters and two private bathrooms, and a physical training room with high visibility to the rest of the station.

Other more utilitarian components of the station include a decontamination room, a compressor room, an EMS storage room and a training mezzanine—all with direct access to the apparatus bays. The building is also protected by a diesel generator backup-power system. This station has a sprinkler system. Additionally, Station #5 was designed to allow for expansion of the apparatus bays in the future. This station was built to have a lifetime of 75 years.

There was careful atten-



tion to include as much sustainable technologies into the final design as possible. Much effort was also made in the preserving and supplementing of natural site vegetation.

Although Station #5 was designed before the prominence of Hot Zones, it does include a dedicated turn-out gear storage room and extractor room that is separated from both the apparatus bay and living quarters.

One of the most significant challenges of this project involved fitting the three-

bay station onto a long, narrow site with zoning setback constraints on all sides. This limited the site's buildable area and immediately dictated a direction in the design of the station.



Official Project Name: Bristol Fire Station #5
Project City/State: Bristol, TN
Date Completed: February 15, 2018
Fire Chief: Michael Carrier
Project Area (sq. ft.): 10,310
Total Cost: \$2,473,000
Cost Per Square Foot: \$240
Architect/Firm Name: Stewart-Cooper-Newell Architects and Thompson & Litton
Website: fire-station.com; t-l.com
Design Team: Stewart-Cooper-Newell Architects (Programming, Schematics and final QC); Ken Newell, AIA, Lead Architect; Garry Sanchez, Project Manager; Architect of Record: Elliott Lambert, AIA, Project Architect; Mechanical, electrical, plumbing, structural, and civil engineering services: Thompson & Litton



Official Project Name: San Marcos Fire Station No. 4
Project City/State: San Marcos, TX
Date Completed: July 19, 2018
Fire Chief: Les Stephens
Project Area (sq. ft.): 14,121
Total Cost: \$4,498,167
Cost Per Square Foot: \$319
Architect/Firm Name: Brown Reynolds Watford Architects, Inc.
Website: brwarch.com
Design Team: BRW Architects: Ray Holliday, AIA, Principal; Justin Dreyer, Project Manager; Katherine Palumbo, Project Architect; Meaghan Gilliam, Project Designer; Jordan & Skala Engineers, Inc.: Chris Claudet, MEP PE; Gessner Engineering: Nikolas Gomes, Structural PE; Frank DesRoches, Civil PE

For this new fire station in the growing community of San Marcos, the input of the staff was paramount. The San Marcos Fire Department intended to use the design of their new fire station as a prototype for future stations, so thoroughness was key. In the early stages of design, the design team met with every firefighter within the San Marcos Fire Department to collect feedback on their new station. Over three days of meetings, the design team took note of all concerns and insightful feedback for specific facility needs. These notes and ideas were then incorporated into the building program and schematic design.

The new 14,121-square-foot station sleeps nine firefighters with an additional suite for the captain. The lobby of the station contains a treatment room for minor

outpatient care, and a public restroom. Beyond the lobby the station is secured from public access. The station contains three drive-through apparatus bays, with airlocks separating the bays from the rest of the living areas. The living/dining/kitchen area is open-concept and has direct access to a back patio for staff use.

The overall design of the station pays homage to the city's historic downtown

fire station. It is comprised of 100 percent masonry and features traditional brick detailing, a wainscot of Arriscraft stone, and accents of red in the bay doors and window mullions. Though the form is



distinctly historic, the interior was designed with the modern conveniences of wireless data, warning lights at the bay doors and LED lighting.

Due to the thoroughness of the design input in the planning process, the design of station No. 4 will serve as a successful prototype for the city's next several fire stations.



Allen & Hoshall was selected to design a functional 21st-century fire station to accommodate the growing population of Signal Mountain. Much of the town is on the National Register of Historic Places so it was important to create a design that was functional while fitting into the town's architectural aesthetic.

The 9,000-square-foot station was designed with sustainability as a major requirement. Insulation systems, high-performance glass, efficient HVAC systems, and the latest technologies in LED lighting systems were utilized to create a functional and efficient facility. Architecturally, the front fenestration reflects the earlier his-

toric fire station that had been lost decades earlier.

The facility was zoned into three areas consisting of administrative, apparatus bays and residential areas. The administrative space included a large multipurpose community room while the rear portion of the facility included bedrooms, day



room and kitchen areas.

The new facility features apparatus storage with four individual entrances and an overall depth of approximately 100 feet, gender-equitable living/sleeping areas, office space for fire and police officers, and specialty spaces to support fire department operations including: SCBA maintenance room, EMS supply, decontamination, climate-controlled turnout gear storage, and a tool/workshop area.

The 2.57-acre site created numerous challenges due to variations in elevation and lack of a sanitary sewer. The site, while



Official Project Name: Signal Mountain Fire Station No. 2

Project City/State: Signal Mountain, TN

Date Completed: October 23, 2018

Fire Chief: Eric Mitchell

Project Area (sq. ft.): 9,000

Total Cost: \$2,755,500

Cost Per Square Foot: \$306

Architect/Firm Name: Allen & Hoshall, Inc.

Website: allenhoshall.com

Design Team: Allen & Hoshall: Rick Boeving, AIA, Project Manager; Michel Lebel, AIA, Project Architect; Norman Sneed, Designer; Zach Webb, Planner; Mechanical: Ron Thompson, PE; Daniel Longserre, PE; Electrical: Mike Collins, PE; Plumbing: Trannie Smith, CPD; Structural: Mike Sheridan, PE; Civil: Lynn Anderson, PE; Charles Bunniran, PE; Utilities: Ben Pearson, PE



beautiful, was shallow, rocky and had a 60-foot drop in elevation. To solve these issues, the design incorporated a combination of select fill towards the front of the property, segmental retaining walls at the interface of the apparatus bay, and a suspended residential section on columns toward the rear of the site. In addition, it was necessary to purchase an easement on the adjacent property to install a septic mound system until the town could provide sanitary sewer to the area.



Official Project Name: Stanislaus Consolidated Fire Protection District Station #24
Project City/State: Waterford, CA
Date Completed: August 7, 2019
Fire Chief: Michael Whorton
Project Area (sq. ft.): 7,518
Total Cost: \$3,231,858
Cost Per Square Foot: \$430
Architect/Firm Name: TPH Architects
Website: tpharchitects.com
Design Team: Architect: TPH Architects: John Hedlund, Project Architect; Structural Engineer: CYS Engineering, Inc.; Civil Engineer: DF Engineering, Inc.; MEP Engineer: LP Consulting Engineers, Inc.; Landscape Architect: Ron L. Smith, RLA

Located in Waterford, CA, is Stanislaus Consolidated Fire District's new fire station. Station 24 has become the end-cap of Waterford City's public services building spread across a city block in the center of town. Nestled against the new police station, and a mere half block from city hall, the landscaping and exterior facades of all three facilities blend naturally with one another creating open spaces and an inviting civic center for public access.

Through intentional design, the station's floor plan provides a clean break between public and private areas while at the same time allowing for quick access to the apparatus bay from nearly every room in the building.

The 7,518-square-foot facility replaces a vintage station that no longer complied with building standards. Station 24 boasts three double-depth drive-through appa-

ratus bays, a fully equipped decontamination facility, a turnout gear room, and individual sleeping quarters to accommodate a crew of four. It is also furnished with a

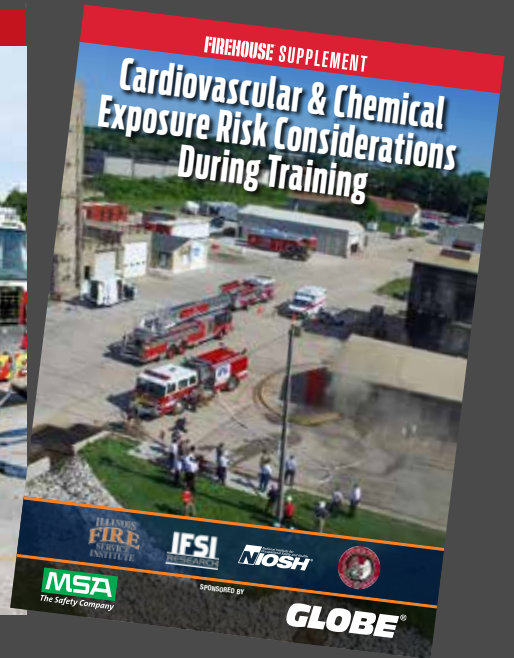
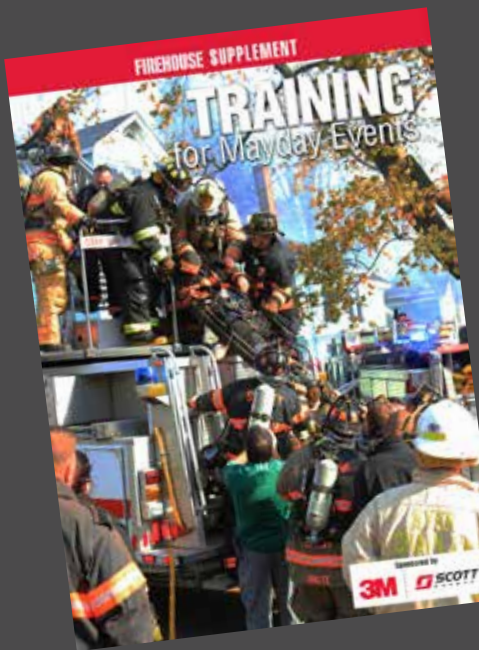


"great room" consisting of a kitchen, storage wall, and day room. Laundry facilities for personal use are located next to the living quarters while the extractor for the fire protection equipment cleaning is located

adjacent to the turnout rooms.

Blending technology and security to achieve highly functional workspaces, we were able to combine state-of-the-art amenities in a very efficient layout. This included spaces for EMS medical storage, and a workshop for the service and repair of the fire hose for the entire district. The station is fitted with skylights and ceiling fans to decrease the amount of electrical consumption and individual HVAC controls in the sleeping rooms to ensure comfort while keeping energy consumption to a minimum.





**Get
More**

FIREHOUSE[®]

Don't miss these must-read Firehouse supplements



Download the full PDFs of these supplements at firehouse.com/special-content



As a state-of-the-art facility, the Round Rock Public Safety Training Center has undergone extensive usage during the short time it has been open. The nearly 100,000-square-foot indoor/outdoor multipurpose center, located in an industrial area of the city, next to the headquarters of the Round Rock Police Department, provides critical classroom instruction and training for fire and police personnel from Round Rock and numerous other municipalities. It also offers public access to community mem-



Official Project Name: Round Rock Public Safety Training Center
Project City/State: Round Rock, TX
Date Completed: July 1, 2018
Fire Chief: Robert Isbell
Project Area (sq. ft.): 96,269
Total Cost: \$25,962,719
Cost Per Square Foot: \$270
Architect/Firm Name: Brinkley Sargent Wiginton Architects
Website: bsw-architects.com
Design Team: Brinkley Sargent Wiginton Architects: Lead Architect, Programming, Masterplan, Design, Interiors; Fire Training Consultant: G2 Solutions Group; MEP: Hendrix Consulting Engineers; Structural and Civil: Hart, Gaugler and Associates; IT/AV: Datacom Design Group

bers for education sessions, social gatherings, and other events.

More than half of the facility's space boasts tiered classrooms, an indoor tactical firing range with twelve 50-yard lanes, a dedicated defense tactics exercise area, fire and police scenario training (including Candidate Physical Ability Tests), a learning kitchen, a large break room to support evening functions, shower/locker rooms, and offices.

Two apparatus bays and a burn village featur-

ing a five-story burn building, a two-story burn apartment, and a two-story residential burn setting are additional



Round Rock Public Safety Training Center

ROUND ROCK, TX



highlights. The burn buildings allow for Class A and Class B burn fire-training exercises. The remaining site programs consist of a large skills pad utilized by both fire and police personnel, a fuel-spill prop, a confined-space and trench-rescue area, a police tactical village, and a shared outdoor classroom/storage building.

The facility allows fire personnel to train with foam and water, which allows ultimate flexibility for other departments to utilize the facility. Other diverse offerings—such as an overturned train-car prop to simulate a chemical spill—allow training for low-frequency, high-risk events. Expansion plans call for a two-story fire warehouse, an emergency vehicle operations course, and a swiftwater rescue training course.

In mid-2019, the center showcased its flexibility when fire-fighters at Round Rock Fire Department's Station No. 1 temporarily relocated to the facility's fire-scenario training area following the discovery of mold at that station.





The building is designed to allow students to experience unique training evolutions for each drill. The core of the building features a two-story adjustable maze, residential stair to a simulated basement and commercial stair tower extending through the roof. When entering the building from the street, responders experience a residential setting whereas entering from the rear presents a commercial/industrial environment.

The five-story drill tower is designed for fire, police and EMS personnel. The first two floors of the drill tower provide search and rescue capabilities. Floor/ceiling breach props connect these two levels to create a dynamic training environment, which is further augmented by a “scissor stair” of intertwining residential and commercial stairs. The third and fourth floor of the building provide four rooms housing class “B” props. The fifth floor and rooftop provide advanced rope-work and rappelling capabilities.

The second phase consists of a 33,500-square-foot indoor facility with classrooms, simulation labs, offices, firing ranges, defensive tactics rooms and break rooms. The building provides an environment for all first responders to train in both academic and practicum scenarios. The ranges provide three training conditions: twelve 50-yard tactical lanes capable of housing regional transportation buses; four 100-yard lane static position firing range for counter-sniper training; and a 50-foot x 50-foot shoot house with adjustable maze panels and an instructor mezzanine.

The Chester County Tactical Village is a campus for joint use training between fire, EMS and police. The four-acre complex is organized along a sloping site that creates dynamic and realistic training environments. It is equipped with the MILES system, a technology that utilizes blank gun cartridges and sensors, allowing responders to experience hostage, active shooter and mass-casualty scenarios.

The burn building provides eight class “A” burn rooms, which are also utilized by police for search and entry training.



Official Project Name: The Chester County Public Safety Training Center
Project City/State: South Coatesville, PA
Date Completed: January 1, 2018
Fire Chief: J. Patrick Davis
Project Area (sq. ft.): 33,500
Total Cost: \$14,000,000
Cost Per Square Foot: \$418
Architect/Firm Name: Manns Woodward Studios, Inc. (Phase 1 & II) in association with Stewart Cooper Newell Architects for Phase I

Website: mwsarch.com
Design Team: Manns Woodward Studios: Robert Manns, Principal Architect and Lead Designer; David Woodward, Principal Architect and Lead Construction Administrator; Gary Campbell, Senior Project Manager; Evan Gray, Project Architect



The White Marsh Volunteer Fire Company is a new 20,000-square-foot station located on a major thoroughfare just off Interstate 95 in Baltimore County, MD. Working as part of the career/volunteer hybrid model within the county, the White Marsh Volunteer Fire Company is 100 percent volunteer and is one of the busiest departments within the region. The new station relocates the department from an aging nearby facility within the 100-year flood plain that also suffered from significant and unpredictable response delays resulting from a major freight rail line located immediately adjacent to the existing building. The new station was constructed on land generously donated to the department by General Motors after being jointly approached by the department and the design team. The facility provides the department with five apparatus bays, a wet training tower, various apparatus support spaces and an efficiently organized operations and living area that improves response time.

The operations and living areas of the station are supported by separated double bunk rooms, three live-in bunks, kitchen, day room, study, fitness area, game room, outdoor patio, and various operations and administrative offices.

The station encourages a stronger relationship with the community not only



White Marsh Volunteer Fire Company

BALTIMORE, MD



Official Project Name: White Marsh Volunteer Fire Company
Project City/State: Baltimore, MD
Date Completed: October 1, 2018
Fire Chief: Kevin Palmer
Project Area (sq. ft.): 20,000
Total Cost: \$6,100,000
Cost Per Square Foot: \$305
Architect/Firm Name: Manns Woodward Studios, Inc.
Website: mwsarch.com
Design Team: Manns Woodward Studios: Robert Manns, Principal Architect & Lead Designer; Jessica Sweigart, Project Architect; Josh Noppenberger, Construction Administrator



through a welcoming overall design, but also by increasing the visibility of response and training activities and including a large training room ready to host a variety of neighborhood functions.

The donation of the land was a win-win for all parties. The department received a new parcel of land capable of improving regional response times and housing a state-of-the-art station. General Motors off-loaded nearly seven acres of land that was not developable due to zoning setback restrictions, thus reducing their

tax burden. The plant also received the added benefit of having a fully staffed fire department "on-site," which resulted in a reduction in their insurance premiums.





The Center Township Volunteer Fire Department (CTVFD) is a 25-member volunteer department serving rural and suburban communities in Northwest Indiana. The possibility to replace their deteriorated, 60-year-old fire station seemed impossible. The project needed to overcome public sentiment and unanticipated challenges, including site constraints and conditions, programmatic needs, and limited financial resources. Through careful planning and determination, a new fully-sprinklered fire station was constructed that met their current—and will accommodate their future—needs.



The new station design showcases

CTVFD's non-traditional colors of blue and white. Hot and Cold Zones are organized and reinforce the functional operations. The Hot Zone is composed of three apparatus bays and support spaces, including a toilet room, turn-out gear room, SCBA filling room, laundry, and

a training mezzanine. The Cold Zone includes firefighters' living/administration area, which utilizes an open-concept configuration, including day room, kitchen, office and report writing. Circulation between the zones is direct with heavy-duty doors, and gasketed-seals create an air barrier between the zones to help minimize the transfer of carcinogens.

The open-concept provides an economical solution that serves the functional needs and fosters social interaction space while maximizing flexibility. Built-in casework, with a media center and concealed sleeping accommodations, further maximizes the use of the space.

The design and siting of the building is deliberate and considers future expansions without costly modifications to the building systems. Structural framing allows

the column-free apparatus bays to be expanded to the east. Similarly, framing and the placement windows allows for the future construction of a training room, office and conference room to the west.

The apparatus bay exhaust system is user-friendly yet maintains proper indoor air quality. The adjacent turn-out gear room has a dedicated self-contained exhaust system with 100 percent outside air intake and a slightly negative pressure relative to adjacent spaces.



Official Project Name: Center Township Volunteer Fire Station
Project City/State: Center Township, LaPorte, IN
Date Completed: February 27, 2019
Fire Chief: Marc Christiano
Project Area (sq. ft.): 12,290
Total Cost: \$2,475,287
Cost Per Square Foot: \$201
Architect/Firm Name: DLZ
Website: dlz.com
Design Team: Stephen Kromkowski, AIA, Principal Architect; Ashley Riley, Assoc. AIA, Architecture, Sara Hicks, PLA, LEED AP, Landscape Architect; Jamie Poczekay, PE, Civil Engineer; Corey Van Luchene, PE and Vanessa Rednour, PE, Structural Engineer; Eric Acker, PE and Zachary Alderman, PE, Mechanical Engineer; Briona Perry, PE and Marvin Hitchcock, PE, Electrical Engineer



Official Project Name: Menan Station #4
 – Central Fire District
Project City/State: Menan, ID
Date Completed: August 6, 2018
Fire Chief: Carl Anderson
Project Area (sq. ft.): 11,500
Total Cost: \$1,500,000
Cost Per Square Foot: \$130
Architect/Firm Name: Resin Architecture
Website: resinarchitecture.com
Design Team: Graham Whipple, Architect/Partner, Resin Architecture, and architect of record under his prior firm Auffallendesign.

The recently completed fire station for Central Fire District, Menan Station #4 provides a much-needed building resource to a rural volunteer fire district that serves 13,000 residents and approximately 220 square miles of land area. The building is unique in many ways including the efficient and functional layout within a generally circular footprint, free-spanning structure over the apparatus bay, and the inherent energy efficiency of the building.

The building is characterized by a generally round footprint constructed of concrete masonry block with an insulated concrete thin-shell roof system that

easily spans the 100-foot diameter with only 6-inch average structure thickness. This minimized structure withstands significant wind and snow loading due to the inherent strength of the curved surface.

The interior layout of the fire-resistant building is characterized by a fire separated division between the business and vehicle storage areas in the building. One side of the building interior



accommodates offices, training areas, and shared support spaces. A currently unused second floor area will be finished as part of a future expansion of the functional needs of the volunteer station. The second side of the interior is characterized by a large volume space for the five-bay apparatus garage with potential to accommodate five full-size response vehicles as the demands on the facility continue to increase.

The energy efficiency of this building type offers long-term benefits in operational costs. The effectiveness of this energy efficiency has already been proven through the approximate first year of the station's operation when cold winter and hot summer months were easily tempered without extreme costs associated with complex HVAC systems.

Menan Station #4 showcases the potential of an affordable and durable building option for rural volunteer fire station needs.

