OEI ARCHITECTURE

ARCHITECTURAL DESIGN BOOK





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COMMUNITY LIVING CENTER VA HEALTHCARE SYSTEM, BIG SPRING, TX

PROJECT DESCRIPTION

The VA resident's care area at Big Spring was primarily housed on the upper floor of the 1950 vintage hospital, which consisted of a long rectangular design serviced by two extensive corridors. These corridors required patients to navigate up to 439 feet one way across slippery, glare-reflecting flooring, making nursing observation and patient access difficult. The layout did not support the VA team's concept of care. In response, the VA requested the design and construction of phased housing, known as Community Living Centers (CLCs), to provide greater patient observation and care while reducing travel distances for patients' activities such as recreation, dining, and socializing.











DESIGN DESCRIPTION

The VA wanted to proceed with the same design as Phase 1 and 2. However, our team thoroughly analyzed the design and planning of the previous phases to identify shortcomings and areas for improvement. Based on this analysis, we presented three options, one of which was selected to proceed. We specifically addressed issues outlined in the TIL that had been omitted, such as storm shelters and life safety designs, as well as insulation designs based on energy-saving codes. Our proposal successfully identified and included these critical elements. Among various client evaluations, our design was praised as significantly superior compared to the previous phases.

The new design provided more outdoor seating areas than the earlier phases and aimed to connect the common spaces, such as dining and living areas, to the outdoors. Large glass curtainwall openings were essential design elements for creating a visual connection with the exterior landscape. Additionally, the clerestory windows along the patient corridors were designed to provide more natural light, enhancing the cozy and homelike interior finishes with a brighter and warmer feel.

The functional spaces and programs were carefully planned by thoroughly reviewing the Technical Information Library and other design regulations and discussing with teh VA user group to meet their needs perfectly.

In addition to designing and developing the new housing facility, the project also included considerations such as decorative security fencing, landscaping, wander-guard systems, physical security design (including blast resistance), and anti-fragmentation laminated windows.

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5C MEDICAL INPATIENT UNIT VA HEALTHCARE SYSTEM, DALLAS, TX

PROJECT DESCRIPTION

The project is designed to supply a new nursing unit in the 5C wing area and an additional staff area behind the existing elevator shafts. The new 5C nursing unit includes five types of patient rooms: Regular Patient rooms, Regular Isolation Patient rooms, Bariatric rooms, a Bariatric Isolation room, and Mental Health rooms. Mental Health rooms require extra attention, with direct and clear sight from the Nurse Station. Three Isolation rooms, including one for Bariatric patients and two for regular patients, have an anteroom to help prevent the spread of contaminants to other spaces. The nursing unit includes a nurse station with support and storage rooms. The centralized Nurse Station is strategically positioned to provide visibility and accessibility to patient rooms and other key unit areas, enabling nurses to monitor activities and respond quickly to patient needs. The new staff area includes a conference room, a break room, a locker room with two staff toilets, an elevator lobby, a storage room, and public toilets.







DESIGN DESCRIPTION

The current elevator lobby will be updated to blend with other public spaces and provide a more welcoming and pleasant atmosphere while looking similar to the lobby on different floors. The Centralized Nurse Station is located in the middle of the 5C nursing unit to facilitate wayfinding by maximizing visibility and accessibility between the patient, public, and staff areas.

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Design features such as ceiling layout, nurse station desk, and floor patterns clearly designate the core space for a more publicly accessible area and medical service (standard or emergency) area. This design provides more openness with minimal obstructions to enhance visual control for staff. Each patient room serves a particular purpose, depending on the patient's condition.

All patient rooms will offer a home-like setting with enough space around the bed for caregivers and medical staff to be present, enabling them to provide care and access necessary tools or supplies. The patient's family members and guests will have more room and amenities in the regular and bariatric rooms. Isolation rooms and mental health services will focus more on improving the patient's condition.

As with other VA projects, we were initially instructed to refer to existing facilities or recently designed patient units. However, our team thoroughly analyzed the existing designs we were supposed to use as references. We specifically examined whether the codes, TIL regulations, and functional requirements were incorporated correctly. We identified various discrepancies, both major and minor, and compiled them for discussion during design charrettes and brainstorming meetings with all stakeholders. Ultimately, the project proceeded according to the proposal suggested by our team.

8C MEDICAL INPATIENT UNIT VA HEALTHCARE SYSTEM, DALLAS, TX

PROJECT DESCRIPTION

OEI was engaged to provide A/E Design Services to Renovate the Dallas Medical Inpatient Unit on the 8th Floor of Building No. 2. OEI renovated approximately 20,000 GSF with associated support services into a Nursing Unit. The existing Wings 100, 200, and 300 are currently Outpatient clinical spaces or offices vs patient care areas. The design solution to provide patient rooms with all the supporting spaces for the Med/Surg floor requires a complete demolition of the wings and building back with the new layout. To account for the potential for airborne pathogens, each new wing was developed to allow exhaust to be fully vented without return. Given the existing facility's constricted space and structural considerations, OEI worked with stakeholders and end users to provide a design that meets VA TIL requirements while also fitting within the available space (VA-SEPS).







03

DESIGN DESCRIPTION

Our design and planning indicate a floor plan with two independent patient care wings that do not share support spaces; therefore, in the future, if a wing is to be "isolated" from the rest of the floor for operational purposes, it can be. The overall interior materials and appearance shall be similar to those of other patient care floors but will have some accents color or patterns to identify the floor from other floors. The VA has indicated that floors 6 and 7 are good examples of desired materials and interior design aspects.

The design ensures good indoor environmental quality through proper ventilation and air filtration to meet required COVID-19 protocols and use low-emission materials to minimize off-gassing of harmful chemicals. Implemented a commissioning process to ensure that all systems and components operated as designed and met the performance goals and regulations.

We considered the long-term costs and benefits of sustainable elements to make the right decisions about investment in energy-efficient systems and materials through the Life Cycle Cost Analysis.



RENOVATE OUTPATIENT CLINIC VA HEALTHCARE SYSTEM, WACO, TX

PROJECT DESCRIPTION

OEI was responsible for developing the redesign and remodel of the six-floor, 68,000-square-foot historic structure constructed in 1939. Initially, the construction cost was limited to \$14 million, classifying it as a minor construction project. However, after incorporating the VAMC's desired options, the construction cost estimate exceeded \$28 million. Ultimately, not all options were included in the construction solicitation, and the final awarded construction cost was over \$16 million.

The building had been unoccupied for approximately 15 years and was used primarily for storage, with multiple minor renovations made over the years. It was later determined that the structure required complete remodification and redesign. A previous asbestos abatement effort had demolished all interior floors, resulting in minimal subsequent demolition to accommodate new design efforts. However, significant remodeling and repair were required for all floors.



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DESIGN DESCRIPTION

OEI focused on functionality and performance based on interviews with the VA team and end users, programming, design development, and cost considerations to achieve the design elements required by the VA Primary Care Team requisites. The ultimate design solution incorporated VA the Patient Aligned Care Team (PACT) functionality while integrating modern and client-focused considerations, including a period-specific entry motif to complement the modernizations.

The project also addressed vertical circulation issues by adding new elevators, a new entrance at the rear of the building, reviving the original interior design and finish to match, and improving site parking. The existing main entrance was located on level 1 above ground level, accessible only via an exterior grand stair, and thus did not comply with ADA standards. Consequently, a new entrance was created at the back of the building, accessible from the main parking lot at ground level. This entrance was designed to be ADA-compliant and to provide a welcoming and celebratory atmosphere, enhanced by thoughtful landscape and canopy design.



RENOVATE OUTPATIENT CLINIC VA HEALTHCARE SYSTEM, BIG SPRING, TX

PROJECT DESCRIPTION

Big Spring VAMC's main building is a six-story structure with light buff-faced brick exterior walls. In 1989, an estimated 4,800 square feet were added to the VA to house the Outpatient Exam and Support facilities.

The design focus for this project was to deliver A/E services to provide interior demolition and renovation as required to bring the Patient Aligned Care Team (PACT) module, including the Outpatient reception, treatment, and support areas, up to current VA standards and TIL and meet end-user requirements.









DESIGN DESCRIPTION

At the project kick-off meeting, we held design charrettes and brainstorming sessions with all stakeholders. We discovered that the existing outpatient clinic space was insufficient to meet the PACT unit requirements as specified in the TIL.

We considered three design options to find an optimized design and planning solution and collaborated with the design team, user groups, and engineers. Despite the tight space constraints, we eventually decided on a design that met the efficient and functional requirements of the PACT while also satisfying the user group's needs. Due to this campus's lack of alternative outpatient capacity, we planned the construction in two phases to ensure that at least half of the patient services could continue uninterrupted.

For the interior design, we chose simple, natural, and welcoming finishes. Each exam room was equipped with sliding doors to maximize space efficiency, and clerestory windows were used in the corridors to create a sense of openness.

"BEEHIVE" DESIGN CONCEPT

The 'Beehive' concept would promote inter-related patient care with centralized observation and diagnostic focus.



SURGICAL SUITE REPLACEMENT

PROJECT DESCRIPTION

OEI designed a new Surgical Suite addition of approximately 23,000 SF and renovated the existing adjacent spaces and related service areas. This building was built in 1942. The Teague VAMC has grown significantly over the last 80 years. The architectural team oversaw all Architectural design requirements, researched required codes and facilities criteria, oversaw the quality control reviews, and reviewed all medical equipment requirements by TIL and coordinated with manufacturers to meet the VA's needs for the new surgical suite. OEI provided the exterior, interior, and medical equipment planning. The exterior skins consisted of masonry veneer, metal panels, and an aluminum storefront system. The interior materials and appearance prioritized cleanliness and functionality.



FUNCTIONAL ORGANIZATION







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DESIGN DESCRIPTION

OEI provided design solutions for four new Operating Rooms (OR): general, specialty/ortho, robotics, and hybrid, as well as an elevator to transport surgical equipment seamlessly from the ORs to the Sterile Processing Department (SPD) in the basement level.

The space programs included a sterile core, an egress stair, storage areas, and supporting mechanical spaces. In addition, the basement layout was modified to accommodate the flow of endoscopes from the soiled elevator into a decontamination room and then placed into a configured AER equipment room equipped with new pass-through AERs.

The existing eight surgical suites were to continue operation while utilities were to be upgraded, especially electrical service, to the suite and to comply with VA specifications, guidelines, design alerts, manuals, details, criteria, instructions, procedures, and standards.

Existing operational suites were on the second (2nd) floor of the facility mandating a design consideration that required the expansion and additional surgical area be elevated on piers to the second-floor level.

Due to potential cross-contamination, equipment servicing, and mechanical room access, the mechanical area was, out of necessity, located on the ground floor, with the surgical suites elevated to the floor height, complementing the existing hospital's second floor.

REGIONAL CONFINEMENT FACILITY USACE TULSO DISTRICT, SHEPPARD AFB, TX

PROJECT DESCRIPTION

OEI was selected to provide the complete design of a new Level 1 confinement facility (50,000 sf site) at Sheppard AFB. We designed it to the 35% level, and the project was put on hold pending additional funding and internal discussions / decisions regarding installation. After a scope modification increase was successfully executed, the project has restarted and is currently at 100% backcheck.

OEI was tasked with constructing a confined facility utilizing required design and construction methods to accommodate a single-story, 5,000 sf Level I, 8-cell requirement. The project included site improvements, fire suppression systems, all utilities, communications, cybersecurity of facility- related control systems, and associated support facilities.



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DESIGN DESCRIPTION

OEI reviewed, analyzed, and incorporated workable design concepts from previous programmatic activity at the outset of our design efforts. We thoroughly examined all design requirements outlined in UFC and NIC to achieve the best design for the confinement facility by integrating advanced security measures and ensuring the confines' safety and well-being. OEI collaborated with the client and stakeholders to define project goals, objectives, and requirements.

OEI's exterior design concept incorporates a distinctive butterfly roof shape, aiming to blend aesthetic appeal with functional efficiency. This roof style not only offers a unique architectural feature but also facilitates natural light, promoting a sense of openness while maintaining security standards and meeting campus aesthetic codes. Additionally, the sloping roof created adequate space for the mechanical system.

The interior design concept uses durable yet comfortable materials to emphasize functionality, comfort, and security. Sustainable principles, including life cycle cost-effective practices, are integrated into the project's design, development, and construction per unified facilities criteria 1-200-02. LCCA was presented to identify and compare life cycle cost effective (LCCE) building energy systems contributing to the energy footprint of the building designed to achieve stipulated energy requirements based on UFC 1-200-02, section 1-6. LCCA guides the agency in selecting the most cost-effective retrofit option by evaluating initial construction costs and operating and maintenance expenses over the building's life cycle, which enables the agency to make informed decisions, reducing long-term operating costs, lower maintenance expenses, and align with sustainable goals.

RENOVATE B900 TO UEPH STANDARDS USACE TULSA DISTRICT, FORT SILL, OK

PROJECT DESCRIPTION

OEI provided A/E Design services for renovations to Building 900 for Permanent Party Unaccompanied Housing (UH). The projects support the Army's vision for home station housing for E1-E6 Soldiers without dependents. The scope of work for B900 was for full design, providing a comprehensive renovation to meet the Army's standards. Building 900 included replacing all building systems, including HVAC systems, heating and domestic hot water boilers, hot water storage, plumbing, exhausts, fire alarms, and building control systems. The design also included renovating the barracks to UFC standards, including fire sprinklers, energy monitoring, and a mass notification system to provide real-time announcements near the building during emergencies and ATFP. Work also included door and window replacement, painting, and finishes. To meet historic preservation requirements, exterior renovations included repairs to exterior stairs, building access, handrails, balcony, porch tile, etc.







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DESIGN DESCRIPTION

The site visit and field verification for the existing B900 involves physically inspecting the property, confirming its compliance with UFC standards, and assessing the condition of the facilities, such as utilities and security features. OEI collaborated with the client and stakeholders to define project goals, objectives, and requirements.

Designed 36 semi-private bedroom modules, including a Kitchen, Living room, Bath, Vanity, closet, and amenities such as CQ/Lobby with waiting area, day rooms, Laundry rooms, and Mudrooms. The interior design concept emphasizes functionality, comfort, clean wayfinding, easy maintenance, encouraging social activities, maximum natural light for each unit, and security through design with durable yet comfortable materials.

Additionally, a value engineering study was required for the Building 900 design. LCCA was presented to identify and compare Life Cycle Cost Effective (LCCE) building energy systems contributing to the energy footprint of the building designed to achieve stipulated energy requirements based on UFC 1-200-02, Section 1-6. LCCA guides the agency in selecting the most cost-effective retrofit option by evaluating initial construction costs and operating and maintenance expenses over the building's life cycle, which enables the agency to make informed decisions, reducing long-term operating costs, lower maintenance expenses, and align with sustainable goals.

Due to the significant increase in seismic loads and the requirements for resisting progressive, we coordinated with structural engineers to be retrofitted with proper seismic detailing with additional shotcrete as shear walls on unreinforced masonry (URM) and Fiber-reinforced Polymer (FRP) composite.

REPLACE & REMEDIATE COURTYARDS VA HEALTHCARE SYSTEM, LOMA LINDA, CA

PROJECT DESCRIPTION

The Loma Linda VA hospital has four interior courtyards placed on top of lower roofs within the building. Three of these courtyards are not sufficiently designed to drain properly. Many of the areas have water running under the doors. Additionally, water is coming through the deck through improperly installed penetrations and leaking into interstitial areas. This is somewhat due to rainfall, but it happens wheneveVr they water large planters in the courtyards.

OEI incorporates the updated areas, such as the new Library in Courtyard #1 and the North wall in Courtyard #3. Three interior courtyards provide outdoor seating space with shades to improve the quality of patients', visitors', and staff's dwelling and working environment during the day and evening.



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DESIGN DESCRIPTION

OEI provided 100% design services, including deleting all planters from the Courtyards and reworking the remaining drains. Removed existing concrete, poured new concrete, and resealed with an integrated cove base for the entire patio. Scope included new design elements to provide patients and staff with shaded seating/outdoor dining areas. providing an aesthetically pleasant visual and efficient layout utilizing the latest design trends.

In fact, the primary goal of this project was to completely restore the old drain system of the existing courtyards to prevent any water leakage or intrusion into the building. We collaborated with several roof consultants to design an optimal solution to achieve this. At the same time, we ensured that this restoration would practically integrate well with the newly devised designs.

The new design for the paving patterns and outdoor seating spaces with shades improve the quality of patients', visitors', and staff's dwelling and working environment. Three concepts for paving patterns were developed, each designated for a different courtyard. Courtyard #1 will feature the "Beautiful Hill (Loma Linda)" pattern. Courtyard #2 will display the "Digital Camouflage Patterns" design. Courtyard #3 will be adorned with the "Military Ribbons" pattern. Furniture and seating layout designs were carefully crafted to match each option, giving each courtyard a unique character that not only aids in wayfinding but also instills a sense of pride in patients and their visiting families. The simple, random-patterned shading devices, designed to be installed at a high position, serve to unify the three distinct courtyard designs while also providing functional benefits.

SIGNAGE & WAYFINDING SYSTEM VA HEALTHCARE SYSTEM, BIG SPRING, TX

PROJECT DESCRIPTION

OEI designed the way-finding system and new signage for both the interior and exterior of the Big Spring Veteran Affairs Medical Center. OEI managed all tasks, timelines, and resources to ensure the project was completed on schedule, within budget, and in compliance with relevant codes. OEI developed the necessary designs to replace and secure all new signage, referencing the VA Design Guide (Technical Information Library) for all way-finding systems, signage locations, and designations. The new way-finding program includes specialty clinics, ancillary services, corridors, elevators, stairwells, vending areas, restrooms, janitor's closets, mechanical rooms, electrical rooms, and code/life safety signs. Signage must encompass room identification signs, floor identification signs, building directories, elevator directories, building orientation maps, directional way-finding signs, code/life safety signs, and department/service identification signs.







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DESIGN DESCRIPTION

As soon as the project began, we established the design goals and vision through design charrettes and brainstorming sessions with all client groups. Based on these sessions, we determined the detailed design direction. Additionally, we carefully considered practical examples from other VA campuses to decide which designs would be optimal for this campus and client.

Four different design options (Army, Air Force, Navy, and Marine) were created for a comprehensive signage program for all buildings on campus, which were then presented to VA staff for review, comment, and approval.

Additionally, OEI performed a site review to verify signage locations, determine available areas for signage, confirm dimensions, and identify potential conflicts with architectural or landscape designs. The signs are designed to be attractive and exhibit professional craftsmanship. They should be easy to recognize, consistent, clear, distinctive, and easy to read. An installation schedule is developed to ensure timely, accurate, and code-compliant installation. OEI is also responsible for removing existing interior wayfinding/signage in the facility and repairing any wall damage caused by removing the existing signs.

FUNDAMENTALS OF WAYFINDING



RENOVATE BLDG 62 AC SHOP

PROJECT DESCRIPTION

The Bldg. 62 AC Shop is currently not safe for occupancy. The roofing system and structure failed approximately 5 years ago. Water intrusion and exposure to the elements has degraded the interior furnishings and utility systems. The structure is also full of loose materials (supplies, furniture, spare parts, etc.) that have also been exposed to the elements and are considered waste by the client.

The roof structure is, for the most part, non-existent. Many of the wood framing members have water damage and have collapsed. The entire roof and roof structure must be replaced. The existing walls are generally being reused. They will be scraped clean and painted. The existing foundation is to generally remain as is. The concrete floor will be scraped clean and sealed. New concrete footings are added to support 4 new columns which help support the new roof load.



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Main Entrance & Dock Area

DESIGN DESCRIPTION

The building will be restored to a serviceable condition with the proposed occupancy designated for general business purposes, including office space, equipment repair, and parts storage.

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The facility will include a large AC/refrigeration equipment repair area, an AC workspace, parts storage, a workshop, AC filter storage, a plumbing shop office, a breakroom, a restroom, a restroom with a shower stall, a HAC, and an IDF.

Accessibility improvements include the addition of a ramp with handrails and the design of new restrooms to be compliant with current accessibility requirements.

The interior design will feature painted new and existing walls, acoustic tile ceilings in office and work areas, and the construction of two accessible restrooms, one of which will have a shower stall. New skylights will bring natural light into work areas without windows, and new rigid insulation will be added to the roof to comply with the energy code.

The new roof structure is designed to anchor to, and bear on, the existing walls. The building currently has three roofs over the two docks. The new design extends the main roof east and west over the two docks, creating a single roof.

The new design will save money by greatly reducing the amount of flashing required, reducing the amount of roof gutter, and simplifying the roof framing. Metal anchors are used to secure the new framing to existing walls and provide resistance to wind uplift. The scraped clean and painted walls will define the various spaces and be used to support and anchor the new roof structure.

KENNEL FACILITY DESIGN JOINT BASE SAN ANTONIO, SAN ANTONIO, TX

PROJECT DESCRIPTION

This report was developed to provide guidance for the required improvements of 25 Military Working Dog (MWD) Kennels at Joint Base San Antonio (JBSA). The current configuration of the kennels provides little to no protection from extreme climates for the MWD assets. This exposure can result in degradation in their health and effectiveness. The intent of this project is to provide potential solutions – along with their projected costs – so as to allow decision-makers to program future design-build projects as funding is available. The improvements described herein provide stakeholders options for architectural and mechanical solutions, which can be combined in a myriad of ways to provide an optimal solution. Architectural solutions include an option to fully enclose a kennel, as well as options to provide temporary enclosure (using roll-up doors) when conditions warrant. Mechanical solutions include varying degrees of complexity ranging from basic ventilation to cooling/heating systems.

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DESIGN DESCRIPTION

To ensure the well-being and environment for MWDs, it is essential to implement both active and passive temperature and humidity control measures. This includes advanced climate control systems to maintain an optimal indoor environment. Maximizing natural light and outdoor views significantly enhances living conditions, while effective noise control strategies create a calm, quiet environment, reducing stress. Maintaining high standards of odor and sanitation control is vital for a clean, healthy space.

Improving maintenance and operation involves designing systems for easy and fast maintenance and clean-up. Creating accessible, user-friendly features simplifies routine tasks and reduces maintenance time. Maximizing visibility in all areas helps quickly identify and address issues.

Optimizing constructability and cost is crucial. This can be achieved by providing design options that streamline construction and reduce expenses. Focusing on efficient construction methods and materials minimizes costs without compromising quality. Ensuring value involves considering both cost and efficiency, making every investment beneficial. Providing detailed cost projections for programming use supports accurate budgeting and financial planning.

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