VA

U.S. Department of Veterans Affairs

Office of Construction & Facilities Management

Interior Design manual

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Preface/Introduction

General

The Interior Design Manual provides comprehensive data sources and design links to enable VA Healthcare Interior Designers (VAHID) and Private Sector Healthcare Interior Designers (HID) the guidance necessary to create professional interior spaces for all healthcare environments including but not limited to Hospitals/Medical Centers, Community Based Outpatient Clinics (CBOC), Long Term Care and Extended Care Facilities and Developer-Led Leased Facilities. This manual provides in-depth information on the VAHID role in the total design and construction project process. The Healthcare Interior Designer will have access to principles and procedures which when applied to facility design, serve to enhance VA's commitment to the highest standards of compassion, commitment, excellence, professionalism, integrity, accountability, and stewardship.

VA Outpatient Clinic - Northern Indiana Healthcare System - Mishawaka, IN.
Photo courtesy of Department of Veterans Affairs.

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"FOR THOSE - WHO SERVED" Main Entry at Orlando VA Medical Center - Orlando, FL. Photo courtesy of RLF Architecture Engineering Interiors, Orlando, FL.

Overview

VA Mission Statement

To fulfill President Lincoln's promise- "To care for him who shall have borne the battle, and for his widow, and his orphan" -by serving and honoring the men and women who are America's Veterans.

Vision

To provide Veterans the world-class benefits and services they have earned and to do so by adhering to the highest standards of compassion, commitment, excellence, professionalism, integrity, accountability, and stewardship.

Executive Summary

The VA Interior Design Manual (IDM) will provide VA staff and healthcare interior design teams (HIDT) an understanding of their roles, responsibilities, and the appropriate procedures for creating a safe, accessible, and healing environment – designs that are enduring and take into consideration durability, feasibility and sustainability. All VAHID and HID supporting new construction, renovation, and developer-led lease projects are expected to follow this manual.

The purpose of the IDM is to aid in the translation of VA design manuals, guides, and master specifications into patient-centric design solutions. VA strives for design solutions that improve the quality of life and productivity as well as protect the health, safety, and welfare of the Veterans, visitors, and staff. Interior design is a major component in establishing and maintaining an environment that is therapeutic, safe, aesthetically pleasing, functionally appropriate and professional.

The IDM will provide tools for understanding current healthcare design industry standards as well as innovative out-of-the-box thinking balanced with a clear awareness of what designing for VA means.

The IDM is a living document that VA staff will support and contribute to in future revisions, therefore creating a sense of ownership and collaboration between the VA staff and VA Central Office.

Internal links are provided to other VA architectural standards and criteria documents to make this manual more user-friendly. The HIDT will utilize VA architectural standards and criteria documents as a basis of design located on the VA Technical Information Library (TIL), and all applicable building codes and industry standards.

The IDM is the resource to help build the rationale for options and challenges to the aforementioned standards and is a companion manual to the Architectural Design Manual (ADM), which provides check lists to organize the design process from preliminary/ conceptual design into architectural criteria and best practice throughout the design approach.

The IDM is also intended to be a companion to the design guides. The design guides provide functional and space criteria that are illustrated with architectural, equipment, and environmental requirements into room templates. See VA Standards and Criteria within this Section 2: Design Principles.

Interior Design is a multi-faceted profession in which creative and technical solutions are applied within a structure to achieve a built interior environment. These solutions are functional, enhance the quality of life and culture of the occupants, and are aesthetically attractive. Designs are created in response to and coordinated with the building shell and acknowledge the physical location and social context of the project. Designs must adhere to code and regulatory requirements and encourage the principles of environmental sustainability. The interior design process follows a systematic and coordinated methodology, including research, analysis, and integration of knowledge into the creative process, whereby the needs and resources of the client are satisfied to produce an interior space that fulfills the project goals. Interior design includes a scope of services performed by a professional design practitioner, qualified by means of education, experience, and examination, to protect and enhance the life, health, safety, and welfare of the public.

All VA Healthcare Interior Designers (VAHID) and private sector Healthcare Interior Design Teams (HIDT)should reference the National Council for Interior Design Qualifications (NCIDQ) definition of interior design found at www.cidq.org. NCIDQ certification is a means to identify interior designers who have demonstrated a minimum level of competence needed to practice interior design.

Outpatient Waiting Area at the Clinic Addition, VA Biloxi Medical Center, Biloxi, MS.
Photo courtesy of Leo A. Daly, Architects/Engineers, Omaha, NE

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1.1 Project Foundation

Scope of Work

VA Staff are responsible for developing a Scope of Work (SOW) for the selection of A/E firms for the full development of the project. The SOW will outline project basics such as department, estimated square feet, design considerations, expectation of materials and finishes, construction budget, and other items specific to the project. The VA Healthcare Interior Designer should participate in the development of the project SOW.

Funding Structure

VA has five levels of funding construction projects. Each level is defined by size and cost. VA staff and the Healthcare Interior Design Team (HIDT) participating in design projects should be aware that some or all of the funding structures may be affected.

Station Level Projects - Construction, renovation, or Non-Recurring Maintenance and repair projects where there is minor improvement, not a minor project. Station level projects are funded as a lump sum figure in the Non-Recurring Maintenance program.

Non-Recurring Maintenance (NRM) - Renovations, repairs, maintenance, and modernizations of the existing infrastructures. NRM focuses on correcting the Facility Condition Assessment (FCA), ensuring the medical center meets applicable codes. NRM modernizes within the existing constraints of the infrastructure to comply with current standards of care and allows for stand-alone demolition, new surface parking, and roads. Funding threshold is capped at $20M. Veterans Equitable Resource Allocation (VERA) is approved by Veterans Integrated Service Network (VISN). Special program funds are approved by Veterans Health Administration Central Office (VHACO)

Minor Projects - Minor construction projects that expand the existing facility by 1,000 GSF or more; projects addressing workload gaps, providing access to care for Veterans, parking structures, and seismic projects. The decision level for selection of minor projects are made at VHACO through national prioritization and is executed by the medical center. The funding threshold is capped at $20M and approved by VISN and VHACO.

Major Projects - New construction, new hospitals and 100% renovation improvements to medical centers to provide state-of-the-art health care. The decision level for selection is made at VHACO. Major projects are those over $20M and funding is appropriated annually by Congress.

Main pedestrian concourse at Rocky Mountain Regional VA Medical Center - Denver, CO. Photo courtesy of SOM © Christopher Barrett Photography.

1.2 Integrated Design Process and Healthcare Interior Designer's Roles

Integrated Design Process (IDP)

VA utilizes the Integrated Design Process (IDP) during the architectural planning and design of VA facilities. The IDP process interlaces the disciplines to provide full and constructive participation of all members of the design and project delivery team with a focus on collaboration ensuring the best results. The IDP facilitates the increase of project efficiency by bringing all stakeholders to the table.

Interior Designer's Roles

Preparation for a project is led by the VA who identifies the program needs for the facility renovation or expansion for design/construction projects based on quantifiable requirements for space and budgetary capacity to undertake the activity. The VA prepares a needs assessment that describes the space use; develops estimates of requirements both spatial and technical; initiates assessment of possible environmental impacts and arrives at a Space and Equipment Planning System (SEPS) generated Program for Design (PFD) around which design activity can develop. It is critical that VA Healthcare Interior Designers are involved in the project preparation stage.

The following sections detail the VAHID role in the typical facility design/developmental process.

Preliminary/Conceptual Design

As a key participant at the kickoff meeting, it is appropriate for the VAHID to come prepared with a full understanding of the project scope, space requirements, SEPS generated program for design, and associated CFM design standards. In addition, the VAHID provides the design team a copy of the established material and facility finish standards. Additional guidance and/or emphasis on critical design-related concerns should be shared and addressed at this early stage of the project. Examples of interior design-related goals:

- Participation of VAHID throughout full design and planning process
- Efficient space allocation and planning
- Visual and or ambient enhancement of the interior space
- Implementation of VA Interior Design standards within the design
- Development of lighting design
- Signage and wayfinding design
- Ensuring the integrity of the interior design goals are maintained as the process of estimating, design, and construction proceeds.

Schematic Design

Once the preliminary/conceptual design is complete, the Schematic Design phase begins with the design team providing an initial block plan layout based on the appropriate facility VA design guide/manual, the approved SEPS program requirements, and any pertinent project information ascertained during the project kickoff meeting. The intent of this phase is to stimulate thought, discussion, and bring structure to the stakeholders' understanding of the project requirements and limitations, not necessarily to produce the final outcome.

Involvement of the project design team is a critical element of the process. The project design team includes VA SMEs' such as Program Office Leadership, EMS, Logistics, A/E of Record, HID's and other consultants that may be involved. Such as but not limited to the VA design team, Owner/Developer for lease projects, Architect,

Healthcare Interior Designer, Engineers, and Builders. Their individual insights can prevent costly changes further along in the process. Gradually, a design evolves which embodies the vision and requirements of all participants while also meeting the project requirements established during preliminary design. The resulting schematic design solutions produced at this stage show site location and organization, general building shape, space allocation, and include an outline specification which makes an initial list of components and systems to be designed and/or specified for the final project design. A preliminary cost estimate by a professional cost estimator is recommended.

During this phase, the Healthcare Interior Designer collaborates with the VAHID to develop solutions to meet the team requirements. These could include meeting the established goals pertaining to but not limited to the function, accessibility, sustainability, material selections to achieve the defined aesthetic of the spaces, identifying design elements, and developing Furniture, Fixture, & Equipment (FF&E) layouts.

Primary Care Clinic at VA Southern Nevada Healthcare System - Las Vegas, NV. Photo courtesy of Apogee Consulting Group.

Design Development

Design Development further defines and refines the schematic design with greater detail for all aspects of the project. During this phase, the HID works integrally with the project design team and VA stakeholders to enhance the function, desired aesthetic of the various spaces, refine the proposed material selections and assist with the estimates/ life cycle cost analysis to determine the impact of the desired material choices.

Room numbering methodology following the VA Signage Design Manual should be established by the end of this phase. During this phase, branding initiatives, wayfinding themes, and navigational strategies are developed and presented to executive leadership for approval. It is recommended to "socialize" the design approach of the project with the end-users and Veterans to encourage their feedback and buy-in to the project.

The conclusion of this phase is a detailed design on which all VA stakeholders agree and may be asked to sign-off/approve the documentation.

All interior design tasks will require collaboration between the VAHID and HID. The formal development of documentation is reflected in the table below. All documents require review and acceptance by the VAHID.

Design Development - Interior Design Tasks	**VAHID**	**HID**
Refines the project design to ensure compliance with VA design guides and manuals.	Consults	Reviews
Develops furniture plans utilizing JSN and/or MTR codes as the furniture schedule identifier.	Consults	Develops
Develops procurement package utilizing MTRs codes, furniture plans, finish schedules and other related documents.	Develops	
Details signage and wayfinding as it relates to the overall space plan and navigation.	Consults	Develops
Formalizes finish details (plans, schedules, and specifications) and incorporates into the architectural documentation.		Develops
Prepares color boards and final design concept drawing.		Develops
Identifies reflected ceiling and lighting design concepts.	Consults	Develops
Ensures electrical and data plans coordinate with furniture and equipment layouts with potential for future expansion.	Consults	Develops
Ensures project compliance with VA directives, codes, standards, and Executive Orders.	Consults	Develops
Plans for clear, open wall spaces for artwork, and mandatory postings.	Consults	Develops

Public Zone at VA Charlotte Health Care Center - Charlotte, NC.
Photo courtesy of Apogee - RPA JV, LLC.

Contract Documentation

The development of Contract Documents is a further evolution of the design development documentation, with the addition of other documents as necessary to execute construction acquisition. High-quality contract documents can be achieved by adhering to the initial program needs developed by the VA. Contract documentation should be carefully coordinated among the technical consultants on the design team. Decisions/refinements are made with the appropriate contributions of all team members.

During this phase, the Healthcare Interior Designer tasks associated with this phase include but are not limited to:

- All original interior design related goals and sustainable design features are included
- Material and finish selections are well documented in the construction drawings and specifications
- A complete review of the final construction documents is conducted focusing on the related elements of the whole interior package

Contract Documentation - Interior Design Tasks	VAHID	HID
Confirm that all original design-related goals and sustainable design features are included.	Consults	Develops
Confirm that material and finish selections are well-documented in the construction drawings and specifications.	Consults	Develops
Review door and hardware schedules.	Consults	Develops
Review wall protection, handrails, and wall blocking.	Consults	Develops
Review reflected ceiling plans.	Consults	Develops
Review interior finish plan and schedule.	Consults	Develops
Review electrical and data plans.	Consults	Develops
Review flooring design plans and schedules.	Consults	Develops
Ensure furniture, fixtures, and equipment referenced as JSN identifiers for equipment and MTR codes for furniture.	Consults	Develops
Confirm owner furnished/contractor installed items take priority in procurement process as it relates to construction document coordination such as audiology booths, technical medical equipment, and specialized casework such as dental suites, etc.	Consults	Develops
Review Signage and Wayfinding.	Consults	Develops
Confirm Artwork and mandatory posting proposed locations identified.	Consults	Develops

Bidding, Construction, Commissioning

After the award of the project to the general contractor, the HIDT must remain fully involved. Decisions previously made may require clarification, supplier information must be reviewed for compliance with the contract documents, and substitutions must be evaluated. If changes affect the operation of the project and/or material maintenance and performance, it is especially important that the VA stakeholders be involved, including the Contracting Officer (CO). User requirements may change, necessitating changes in the project. These changes require broad consultation among the VA project manager, Contracting Officer's Representative (COR), CO,

consultants, and sub-consultants. The VA Contracting Officer is the only official that can approve changes that affect the existing contract.

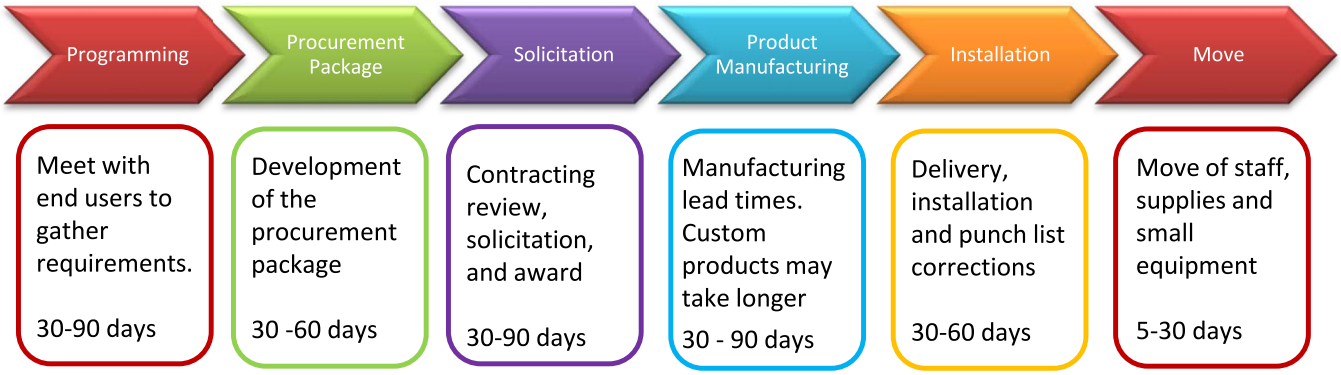
The A/E team and HID works closely with the project manager, COR, VAHID, and contractor to ensure:

- Compliance with the established construction documents
- Compliance with specifications and material selections and any substitution requests due to availability of contractor provided items such as materials, finishes, and equipment
- Adherence to timelines

The HIDT is responsible for assuring that the project meets the requirements of the contract documents; but, the project success at meeting the requirements of the original program can be assessed by the construction management team or third parties through the commissioning process. A full range of functions in the building should be evaluated and the design and construction team can be called upon to make changes and adjustments as needed.

Timeline Development

Project timeline development is an important aspect of the procurement process. VA Healthcare Interior Designers need to be aware that Project Timelines have a range of about 155 days at a minimum to 420 days for larger projects. Time frames are estimates and may be impacted by project size and scope and as well total workload of the VA Healthcare Interior Design Staff.



Project Timeline Range from 155 days minimum to 420 days for larger projects

Activation

Activation is the process of taking the building from design and construction and turning it into a live, operational building. The VAHID plays a key role in the project through all stages beginning from project development to 'First Patient Seen' opening day. Each project can be multi-faceted and keeping track of who is responsible for the various tasks requires continual review. It is recommended that some method of tracking responsibilities is developed based on the complexity of the project. Typical activation tasks may include:

- Project Management
- Transition planning
- Furniture, Fixtures, and Equipment (FF&E) planning
- Design

- Mock-up
- Acquisition
- Warehousing
- Testing
- Delivery and installation
- Training
- Staff and property relocation
- Final turnover, close-out, and post occupancy evaluation

The key is to clearly identify at the beginning of a project who is responsible for the planning/design (the decision-maker), the procurement, and installation responsibility. As the project develops the responsibility for the tasks above should be determined and documented.

For additional activations support, engage with the VHA Activation Program posted on the Healthcare Environment & Facilities Programs (HEFP) website. http://vaww.hefp.va.gov/

Post Occupancy Evaluation

After the project is fully operational, a Post Occupancy Evaluation (POE) should be conducted no earlier than twelve months after the space is commissioned. The POE assesses how the building meets the original and emerging requirements. Such information is useful for VA when additional construction of the same type is considered. Mistakes can be prevented, and successes repeated. The POE should be submitted to CFM for performance assessment. POEs are also informative in addressing planning/design/construction standards to meet evolving users' needs, healthcare trends, and technology developments.

The VAHID will participate in the POE and review and discuss findings with the team. The integrated project team's success depends on clear and continuous communication, rigorous attention to detail, and active collaboration with all team members throughout all phases of the project.

Reception Area at Madison Regional Health System - Madison, SD.
Photo courtesy of Apogee - RPA JV, LLC

1.3 VA Space and Equipment Planning System (VA SEPS)

VA SEPS

VA SEPS is an automated Space and Equipment Planning tool for healthcare facility planning and design developed jointly by the Department of Defense and the Department of Veterans Affairs. Based on data input questions, a VA/VHA approved baseline Program for Design (PFD) is generated that governs the allowable space permitted.

VA SEPS guides architects, planners, and designers in planning projects that accurately conform to VA criteria standards. SEPS generates a baseline Program for Design (PFD) and Project Room Contents (PRC) reports for the Department of Veterans Affairs and Defense Health Agency (DHA) projects.

VA SEPS incorporates the VA Space Planning Criteria and Equipment Guide List which can be found on the TIL. http://www.cfm.va.gov/TIL/planning.asp

Joint Schedule Numbers (JSN)

The project team will need to become familiar with the PRC and the associated Joint Schedule Numbers (JSN) identification numbers for FF&E.

JSNs fall into several acquisition categories and responsibility for those items requires careful coordination. JSN acquisition categories can change based on specifics for the project. The JSN is a five alphanumeric number used to identify FF&E during planning, design, and activation. The number consists of an alpha character followed by four additional characters. The first alpha character denotes the group category an item represents.

Group Category	Description
A	Architectural
C	Fixed Casework
D	Dental
E	Modular Casework
F	Furniture and Furnishings
G	Physical Therapy and Gym Equipment
K	Food Service Equipment
L	Laboratory Equipment
M	Miscellaneous Medical Equipment
P	Plumbing
R	Refrigeration Equipment
S	Sterilizers, Decontamination, and Associated Equipment
T	Shop Equipment and Tools
U	User-Defined Items (Used in SEPS only)
V	Veterinary Equipment
X	X-Ray Equipment

VA Acquisition Codes

The VA Acquisition Codes used are indicated in the PRC in the responsibility column and is a typical short acronym or term to identify the responsibility of the Government or contractor relative to purchase and installation. The code provides a definition of the acquisition code.

Acquisition Code	Description
CC	Contractor Furnished Contractor Installed. Equipment purchased and installed by the contractor.
VC	VA Furnished Contractor Installed. Equipment is provided by the Government and installed by the Contractor (used for major imaging and OR equipment).
VV	VA Furnished VA Installed. Equipment purchased and installed by the Government.
L_RE	Other. Equipment Leased or rented and installed by the Government
R	Reuse. These are existing equipment assets that will be transferred and reused and may be a relocation cost associated with them.

PACT Exam Room at VA Charlotte Health Care Center - Charlotte, NC.
Photo courtesy of Apogee - RPA JV, LLC.

1.4 Building Information Modeling (BIM)

Building Information Modeling (BIM) is an integrated database of coordinated information to which many VA and private-sector participants in the design process contribute. BIM is an intelligent 3-D model-based process. When an element is changed, every view is updated in sections, elevations, and sheet views allowing all designers to see changes in real-time. BIM modeling provides for continuous and immediate analysis of project design, scope, schedule, cost information, and other matters. VA adopted BIM for design on Major Construction projects in 2009 and issued the BIM Guide requirements for use on all VA construction in 2010. VA encourages all Architect-Engineer (AE) and General Contractor (GC) teams to drive inefficiencies out of their workflow by employing BIM methodologies to increase delivery efficiencies in relation to faster delivery, and increased quality of design and construction.

VA BIM Standards may be accessed on the VA TIL. https://www.cfm.va.gov/til/projReq.asp

BIM identifies and enhances design documentation and brings numerous attributes and benefits such as:

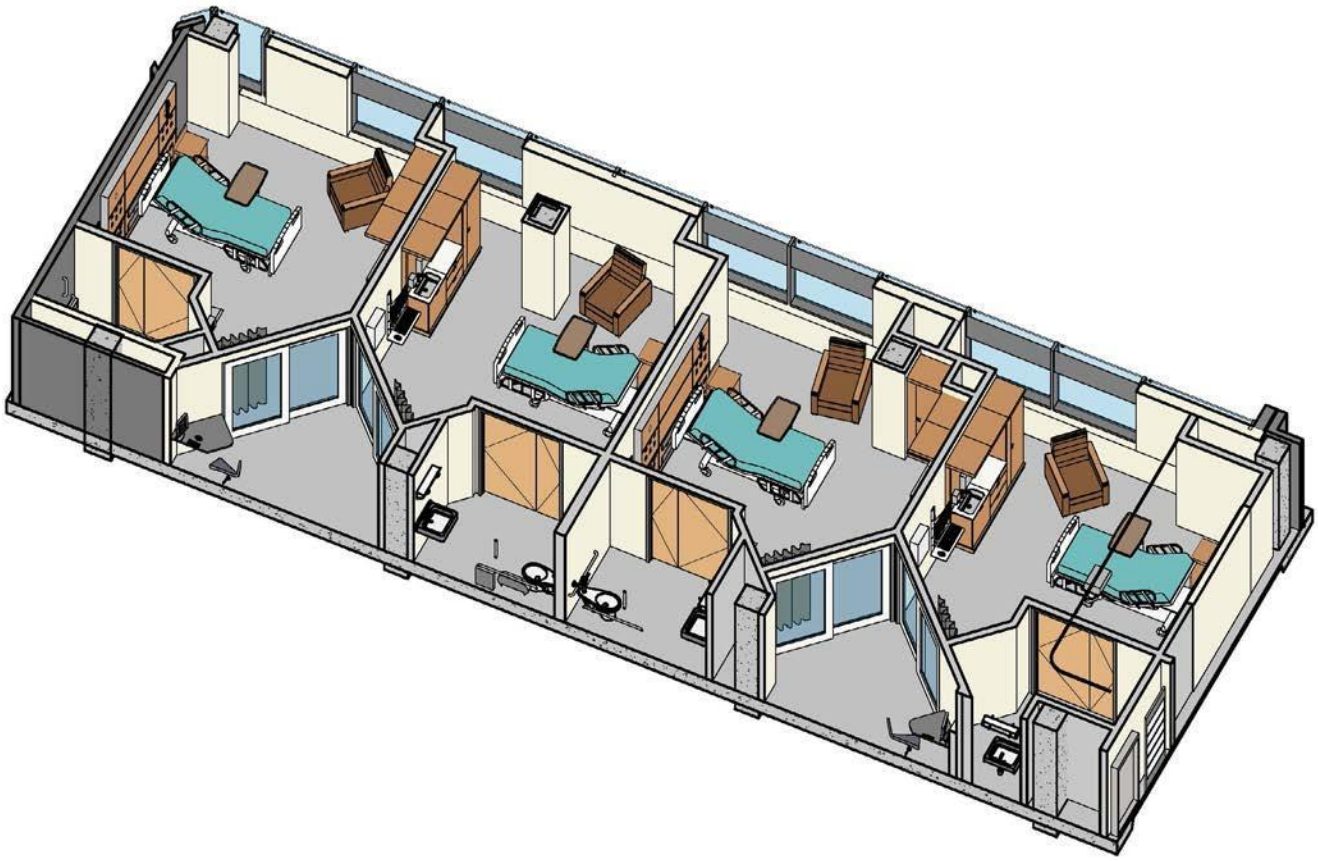
- Higher quality of work performance
- Better coordination among design and engineering disciplines
- Cost savings in the design and engineering work
- Increased speed of delivery

BIM enhances the collaborative process utilized by architects, engineers, construction companies, and interior designers to efficiently visualize, plan, and design new construction and renovations of VA facilities. It provides an integrated database of coordinated information among the contributors to the design and engineering of a building. In addition to graphically depicting the project, BIM offers key information such as the physical and functional characteristics of the building that can be used to analyze its performance. The use of coordinated, consistent, computable information results in a reliable, digital representation of the building that can be used during the design decision process, production of contract documents, planning, and building performance. BIM allows information to be kept up to date and accessible to architects, engineers, contractors, and others.

BIM-generated interior 3-D rendering for Renovate Inpatient Kitchen at the Omaha VA Medical Center
Image courtesy of CLH Architects, Elkhorn, NE

From a Healthcare Interior Designer's perspective, BIM provides a variety of improvements and efficiencies in the design process, including contract documentation, preconstruction

estimating, procurement, scheduling, coordination, cost efficiency, and closeout documents for finishes, furniture, and equipment that are all integral to the environment of care.



ICU Renovation at VA Salt Lake City Health Care System - Salt Lake City, UT.
Image courtesy of Apogee Consulting Group.

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2.1 VA Standards and Criteria

The VA TIL Manuals serve as the reference documents that are expected to be followed in the planning and design of VA medical facilities.

The Interior Design Manual and the current editions of the following documents, also found in VA Technical Information Library (TIL) (https://www.cfm.va.gov/Til/), comprise VA's standards and criteria.

Office of Construction & Facilities Management (CFM)

CFM is responsible for the planning, design, and construction of all major construction projects greater than $20 million. Additionally, CFM acquires real property for use by VA facilities through the purchase of land and buildings, as well as long-term lease acquisitions.

Through the construction and real property programs, CFM delivers high-quality buildings, additions, large scale renovations, and structural enhancements. CFM also develops facility standards and manages facility sustainability, seismic corrections, physical security, and historic preservation of VA facilities. https://www.cfm.va.gov/

Technical Information Library (TIL)

Technical Information Library (TIL) is the resource for the VA design and construction information. https://www.cfm.va.gov/til/index.asp

VA Program Guides, Manuals, and Standards

The most current VA Program Guides, Manuals, and Standards are the basis of design for each project at the time the contract notice to proceed is issued. These requirements continue to apply for the life of that project and is a best practice to keep documentation for later reference. PG-18-1 Master Construction Specifications are used for construction projects. https://www.cfm.va.gov/til/spec.asp. These specification set performance standards that will aid design staff participating in the project development of interior design projects

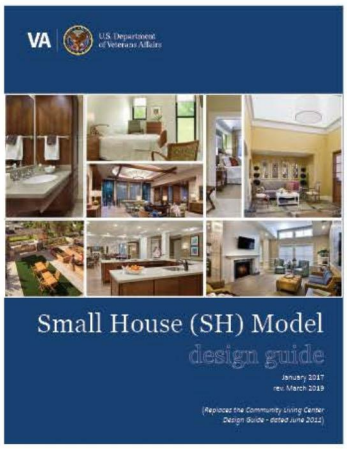
PG-18-3, Design and Construction Procedures (https://www.cfm.va.gov/TIL/sDetail.asp). Design and Construction Procedures establish consistent design and construction practices and are the minimum acceptable standards for the design and construction of VA facilities. For VA's general drawing requirements, including organization, size, scales, and CAD format, see Design and Construction Procedures, Topic 2, "Drawings".

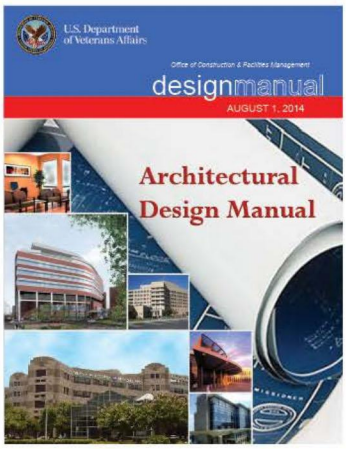
PG-18-4, Standard Details and CAD Standards (https://www.cfm.va.gov/TIL/cPro.asp) – VA standard details include scale drawings of many specific items and conditions and are to be used as a guide only, with exception to standard details specifically stipulated by PG-18-3, VA Design and Construction Procedures.

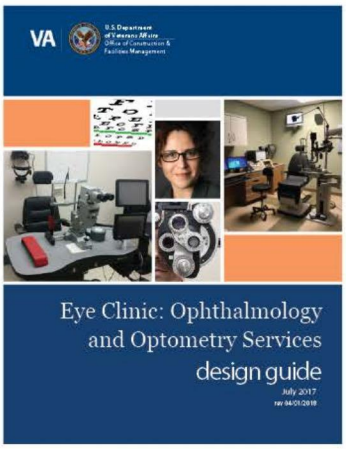
PG-18-5, Equipment Guide List (https://www.cfm.va.gov/til/equip/equipIndex.pdf) – A list of VA approved equipment, room contents, and furnishings for each space in a department.

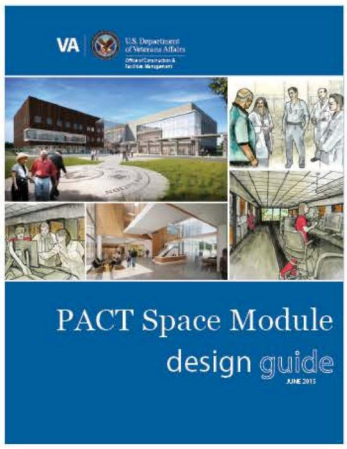
PG-18-9, VA Approved Space Planning Criteria (https://www.cfm.va.gov/TIL/planning.asp) – This includes VA approved space criteria for each room in a department, design considerations, space relationship diagrams, and inter-functional

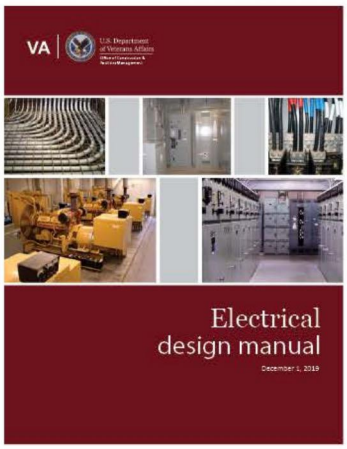
relationship matrices. VA Approved Space Criteria is the metric that determines the space allocation for each department in a facility. The Space Criteria is also the space calculation driver contained within the SEPS application for developing a Program for Design.

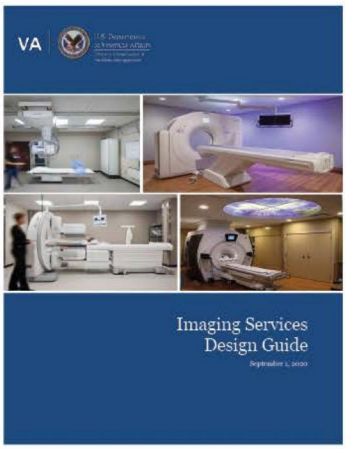


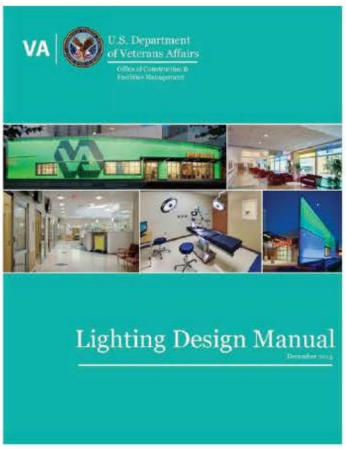


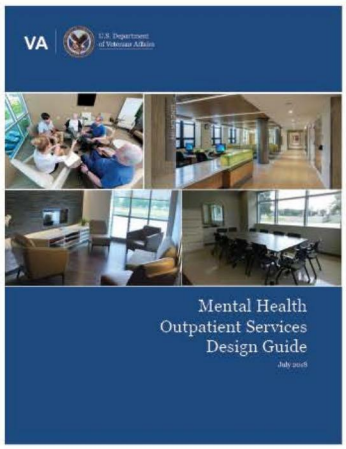












PG-18-10, Design Manuals (https://www.cfm.va.gov/til/dManual.asp) - There are a number of design manuals in regards to: Architectural, Asbestos Abatement, CPM Schedule, and Risk Management, Electrical, Elevator, Estimating, Fire Protection, HVAC, Interior Design, Lighting Design, Physical Security and Resiliency, Plumbing, Signage and Wayfinding, Site, Steam VA Heating, Hot Water and Outside Distribution Systems, Structural, Sustainable Design, Telecommunications, and Special Telecommunications Systems. The design manuals are to serve as the master reference document that is expected to be followed in the planning and design of, but not limited to, local level remodels, in-house construction, research, new construction, and administration areas of medical facilities for VA.

PG-18-12, Design Guides (https://www.cfm.va.gov/til/dGuide.asp) – These documents address planning criteria for specific departments that are functional and integrated with architectural, equipment, and environmental requirements. Room Templates are available within these guides that illustrate the design approach for more complex room types. Design Guides have been carefully and expertly developed to give specialty design information and criteria for complex design areas, such as Hemodialysis, Spinal Cord Injury, Pulmonary Medicine, and PACT (Patient Aligned Care Team) Space Module, just to name a few. Not all departments have a design guide. Focus has been placed on clinical care spaces. Design guides are intended to help speed the design process, control cost, avoid errors and omissions, and get the best value for dollars spent. The design guides were developed in partnership with the specific departmental /clinical function/building type and are

benchmarked with similar private-sector guides. They are to be applied as a basis of design, not as rigid standards.

PG-18-13, Barrier Free Design Standard (https://www.cfm.va.gov/til/accessibility.asp) – The accessibility design standards that Architects, Engineers, Interior Designers, and Contractors must provide for a VA facility.

PG-18-14, Room Finishes, Door & Hardware Schedule (https://www.cfm.va.gov/til/room/RoomFinishes.pdf) – This document provides standards for interior finishes, doors, and hardware for new or renovated facilities constructed within the Department of Veterans Affairs. The essential criteria for the selection of these materials are their appropriateness for function and space, sustainability, life cycle costs, durability, and ease of maintenance. Refer to Section 1 "General" for the abbreviations related to finishes and doors as well as other requirements.

PG-18-15, A/E Submission Requirements (https://www.cfm.va.gov/til/aeDesSubReq.asp) – This includes all Architectural / Engineering minimum submittal requirements for the following:

- Major New Facilities, Major Additions, and Major Renovations
- Minor and NRM Projects
- Cemetery Projects
- Request for Proposals Design/Build Projects
- Seismic Upgrade Projects and other potential projects such as Clinical Specific Initiatives CSI

Major Checklist - Refer to Appendix A

VHA Program Guides – VHA/EPS Program guides provide documentation of the responsibilities for that particular subject such as EPS Interior Design Program Guide, EPS Mental Health Product Guide, and others. The guides are available upon request.

VA Standards Alerts (SA) and Design Alerts (DA)

Standards Alerts serves to identify innovative and broad-ranging standards and design processes and procedures that have a major impact on the VA's goal of delivering world-class facilities. Whereas Design Alerts are issued to reduce construction change orders and for addressing construction-related issues. The Standards and Design Alerts supersede original guidance and are eventually incorporated into the revised design guides and design manuals. The VAHID and the HIDs during the Design Development phase adhere to the most up to date requirements, criteria, and details. https://www.cfm.va.gov/til/alert.asp

Hematology/Oncology Cancer Treatment Center Renovation, James H. Quillen VAMC - Mountain Home, TN.
Photo courtesy of American Structurepoint, Inc. A/E, Columbus, OH.

2.2 Infection Control

Architectural standards do not explicitly address infection control. Basic healthcare design consideration is underlying in VA's standards and planning criteria. VHA Directive 1131(3) Management of Infectious Diseases and Infection Prevention and Control Programs should be reviewed. https://www.va.gov/vhapublications/publications.cfm?pub=1

Examples include:

- Basic separation of clean and soiled materials and activities as guided by the Space Planning Criteria, particularly by the design considerations and relationship matrices and diagrams.
- Frequent hand washing is promoted by adequate and appropriately located lavatories and sinks, as per PG-18-9 Space Planning Criteria and VA-Space Planning equipment System (VA-SEPS) and the PG-18-5 Equipment Guide list.
- Isolation of contagious or especially vulnerable patients is provide by isolation rooms or spaces in accordance with Space Planning Criteria.
- Select textiles that are compatible with local EMS cleaners and disinfectants.
- Select finishes that are appropriate for each space, adhering to PG-18-14 Room Finishes, Door & hardware Schedule.
- Develop specifications of features such as door frames, casework , and finish transitions to avoid dirt-catching and hard to clean crevices and surfaces, adhering to standard details.
- Provide adequate and appropriately located housekeeping spaces, adhering to Space Planning Criteria and the Equipment Guide List.

Patient/Family Waiting at Greenville VA Outpatient Clinic - Greenville, SC.
Photo Courtesy of Photos © Tze Chen and Array Architects, Conshohocken, PA

2.3 Fundamental Design Considerations

Design Story

The design story is a tool for designers to build rationale, consensus, and gain approval for their design solutions.

It should be conceptualized early in the project and become enhanced during all design phases. The design story should be inspired by a patient-centered care delivery model and the whole health of the Veteran. It should also recognize the cultural, regional, and ethnic differences, military service, and should follow VA standards, directives, and executive orders. The design story should be inspired and driven by emerging healthcare design, technology, evidence-based design, sustainability, and collaborative resources. In every project, the entire project team can contribute to the design story. The design story justifies the design and provides validation, benchmarking, and lessons learned rationalization.

Patient Privacy

The health care environment affects the quality of care provided to Veterans. Privacy affects comfort, sense of security, and perception of care. All VA medical facilities must ensure that these environments support Veterans' dignity, privacy, safety, and security, whether in planning new construction, remodeling older facilities, or improving patient care programming. VA CFM Design Alert #149 provides additional guidance and clarity on VHA Directive 1330.01 which provides requirements for Veteran privacy.

Patient Profile

VA staff and the HIDT should create a patient profile for each project patient demographic. The patient profile is a description of the unique characteristics and needs of the various Veteran patient users and may include cultural, regional, and ethnic characteristics. The description should address both mental health and physical characteristics. This profile will help the designer create patient-focused design solutions.

In a patient-centered environment, design solutions will respond to the needs of the patient profile through architecture and interior design. When VA staff members and the HIDT participating in the development of design solutions, they should discuss the patient profile impact. In patient-centered environments, caregivers include the patients in the decision-making of their care; therefore, the benefits of understanding the patient profile affect both the patient and the caregivers. This information allows the designer to better understand the Veteran as an individual.

Below are examples of patient profiles.

Patient Profile 1: Post-Traumatic Stress Disorder (PTSD) patients who typically arrive alone and have a greater need for privacy would require smaller separated waiting areas instead of large waiting rooms.

Patient Profile 2: Patients with conditions ranging from limited mobility to complete paralysis such as Spinal Cord Injury/Disorders (SCI/D) would require wireless systems to control light, temperature, nurse call, TV, etc.

Healing Environments

During all phases of the project, creating a healing environment is important in a patient-centered care delivery approach. All designs should be judged against the industry and VA best practices to validate that the solution meets the goals and principles of the Healing Environment. Refer to the Healing Environments design guidelines: https://www.cfm.va.gov/til/etc/HealEnvir.pdf

Additional information on healing environments can be found in healthcare design industry publications. These resources include books, magazines, articles, conferences, and symposiums on healing environments.

The VA healing environment principles should focus on:

- Balance between new and familiar
- Beauty
- Culture
- Environmental stewardship
- Interaction with outside world
- Link to nature
- People
- Space for relaxation
- Positive self-awareness
- Meaningful/diverse stimuli
- Sense of privacy

Reception Desk at the Boise VA Medical Center, Boise, ID.
Photo courtesy of Department of Veteran Affairs.

Labyrinth at Dixie Regional Medical Center - St. George, UT.
Photo courtesy of Department of Veterans Affairs.

Evidence-Based Design

Evidence-Based Design (EBD) is the design of healthcare facilities based on research and documented evidence and outcomes applied to the environment to make it more supportive of healing and well-being. The key players in the research of EBD are supported by The Center for Health Design, The Institute of Healthcare Improvements, and The National Academies of Sciences Engineering Medicine. The physical environment affects well-being and is poised to emulate evidence-based medicine and positive outcomes.

VA staff and the HIDT should understand the effects of EBD on design decisions. Healthcare environments that use research data to improve medical outcomes focus on:

- Environmental Controls – Empowers patients to reduce stress and increase satisfaction
- Social support – Speeds recovery with the support of loved ones
- Access to nature – Use of natural light and healing gardens
- Elimination of environmental stressors – Use of positive distractions such as color, art, views of nature

Patient-Centered Care

The VA provides a full spectrum of healthcare services for Veterans and embraces the principles, spirits, and intent of EBD in the creation of healing environments. Awareness of these principles can assist in identifying standards and solutions to the Veteran/Patient-Centered Care (PCC) approach to health care.

PCC design should be the guiding principle utilizing EBD during the design process, ensuring the patient is the central focus of the design.

PCC considers the patient's cultural traditions, personal preferences, and values. It also considers the family situation and the Veteran's lifestyle, as well as supporting the body and spirit. The Veteran and their caregiver have an integral role in the care team and collaborate with healthcare professionals in making clinical decisions.

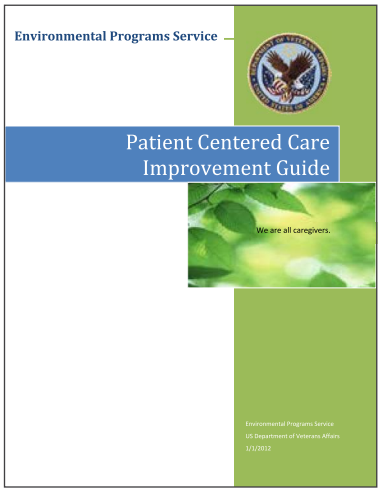
Inpatient Mental Health Waiting Area at VAMC Ann Arbor, MI.
Photo courtesy of Department of Veterans Affairs.

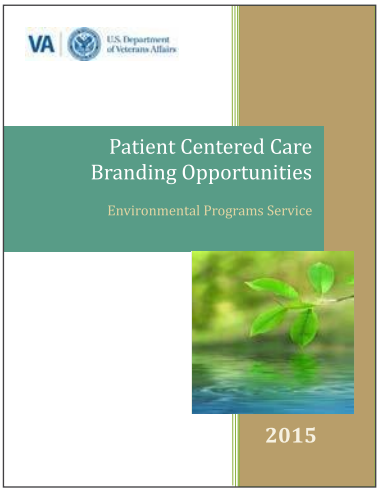
VA optimizes the health and healing of every Veteran by transforming the episodic care model to a whole health approach to patient care.

The built environment impacts the patient's perception of healthcare. VHA has developed resources to assist the HID in understanding PCC design objectives that make a positive impact on the patient experience

The following information is available internally to VA staff but can be made available to other private-sector HIDs when appropriate and upon request:

- Environmental Program Service (EPS) Patient Centered Care (PCC) Improvement Guide: http://vaww.hefp.va.gov/resources/eps-patient-centered-care-improvement-guide
- Environmental Program Service (EPS) Patient-Centered Care Branding Guide: http://vaww.hefp.va.gov/resources/eps-patient-centered-care-branding-guide





(Left) Dining/Family Room at Tidewell Hospice House, Lakewood Ranch, FL. Photo courtesy of WBRC Architects/ Engineers, Lakewood Ranch, FL.

(Right) Patient Room at Tidewell Hospice House, Lakewood Ranch, FL. Photo courtesy of WBRC Architects/ Engineers, Lakewood Ranch, FL.

Whole Health Care

The whole health care model is a shift away from an episodic care model approach to healthcare, instead targeting multiple determinants of health, including physical, emotional, mental, social, spiritual, and environmental influences.

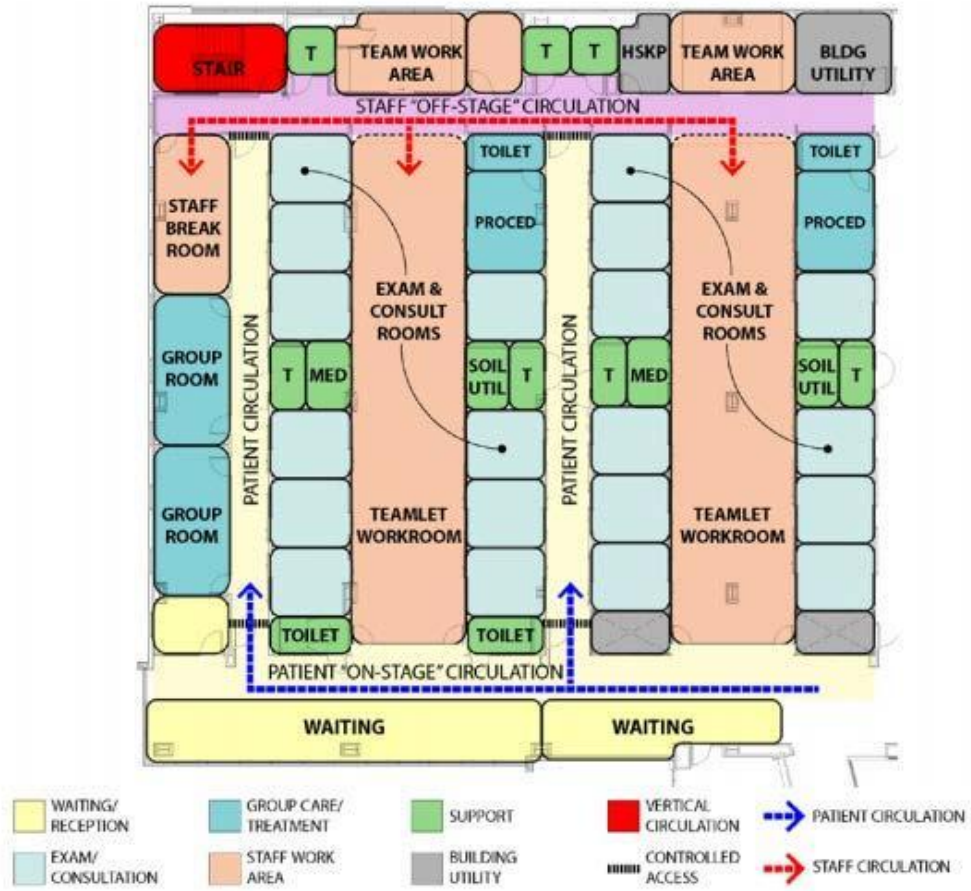
The healthcare design industry has publications that VA staff and the HIDT participating in the development of interior design projects can reference on healing environments. These resources include books, magazines, articles, and websites and attending live events such as webinars and conferences on healing environments.

Physical Environment

Budget allocation must take into consideration the physical hierarchy of building zones and the corresponding design and finish selections. The common zones in order of hierarchy are **public**, **patient**, **staff**, and **service**.

The chart below Common Project Zones addresses key spaces applicable to a broad range of projects but may not reflect a comprehensive list.

Common Project Zones			
Public Zone	**Patient Zone**	**Staff Zone**	**Service Zone**
• Building entries • Lobbies • Elevators and stairwells • Retail • Spiritual spaces • Cafeterias and coffee shops • Restrooms	• Patient circulation • Waiting rooms • Treatment spaces • Inpatient bedrooms • Conference areas • Group rooms • Registration areas • Consult rooms	• Offices • Team work areas • Nurse stations • Locker rooms • Staff break rooms • Conference areas • Research areas	• Communication rooms • Electrical rooms • Soiled and clean rooms • Housekeeping aide closets • Warehouse/receiving • Storage • Linen distribution • Laundry/linen distribution



Example of building zones diagramming from: (VA TIL) PG 18-12 - Mental Health Outpatient Services Design Guide, July 2018.

Accessibility

The Americans with Disabilities Act (ADA) of 1990 set accessibility requirements for state and local governments, as well as private sector projects, similar to the requirements set for Federal projects through the Architectural Barriers Act (ABA). The ADA guidelines are technically called the ADAAG Standards. The Architectural Barriers Act (ABA) ensures that buildings financed with federal funds are designed and constructed to be accessible. This law requires all construction, renovation, or

leasing with federal funds to meet the current edition of the Architectural Barriers Act Accessibility Standard (ABAAS).

The ABAAS was adopted on May 9, 2006, for new construction and alterations, June 30, 2006, for lease-construction facilities, and February 7, 2007, for all other leased facilities. The current edition of ABAAS replaces the Uniform Federal Accessibility Standards (UFAS), which was VA's previous standard for accessibility.

In addition, VA uses PG-18-13, VA Barrier-Free Design Standard, to supplement the Architectural Barriers Act Accessibility Standards (ABAAS), January 1, 2017 (rev 11/01/2018) https://www.cfm.va.gov/til/accessibility.asp to meet the needs of the Department of Veterans Affairs facilities.

VA exceeds some accessibility requirements due to patient population needs. The table below represents some examples of variance between VA and ABAAS, but is not an all inclusive listing.

Floor Surfaces

REQUIREMENT	VA	ABAAS
Changes in level	Not permitted on SCI floors	No requirement
Carpet cushion or padding	Not permitted	Permitted

Windows

REQUIREMENT	VA	ABAAS
Sill height in patient bedrooms	600 mm (24") maximum	No requirement

Accessible Route

REQUIREMENT	VA	ABAAS
Width, min. Patient Care Areas	1800 mm (6'-0")	900 mm (3'-0")
Width, min. Administrative Areas	1500 mm (5'-0")	900 mm (3'-0")
Slope, maximum (including parking spaces)	1:33 (3%)	1:20 (5%)
Minimum gradient of walk requiring rest areas every 60 000 mm (200')	1:50	1:33
Turning Radius	1650 mm (5'-0")	1500 mm (5'-0")
Turning Radius, Bariatric	1800 mm (6'-0")	1500 mm (5'-0")

Sustainable Design

The VA Sustainable Design Manual should be referenced to understand the VA goals and integrate key sustainable elements into the interior design and material selection process.

Compliance with the VA Sustainable Design Manual and PG-18-1 Master Construction Specifications is required.

The following areas of sustainable design should be explored:

- Recycled content
- Resources reuse
- Regional materials
- Certified wood
- Modular casegoods and furnishings
- Low emitting materials
- VOC emitting

Design Elements of the Healing Environment

The physical design elements that contribute to a healing environment include art, accessories, ceilings, color, floors, furniture/cabinetry, hardware, lighting, linens, music, plants, textures, upholstery, walls and wall coverings, window coverings, and woodwork.

- **Artwork:** Artwork can provide a soothing image that contributes to stress reduction and patient satisfaction. VA supports the inclusion of artwork and it should be responsibly used in projects to assists in wayfinding, honors military service, and reinforces the VA Mission.
- **Ceiling:** Ceiling design balances acoustic performance, aesthetic appeal, maintenance, and cost considerations. Ceilings can provide a positive distraction to recovering patients and can be used to reinforce wayfinding.
- **Color:** Color impacts perception of space and selection should take into consideration culture and regional influences.
- **Lighting:** Lighting designs should incorporate varying lighting types, lighting controls, decorative fixtures, etc. Lamp color temperature and levels must be considered for different eye maladies.

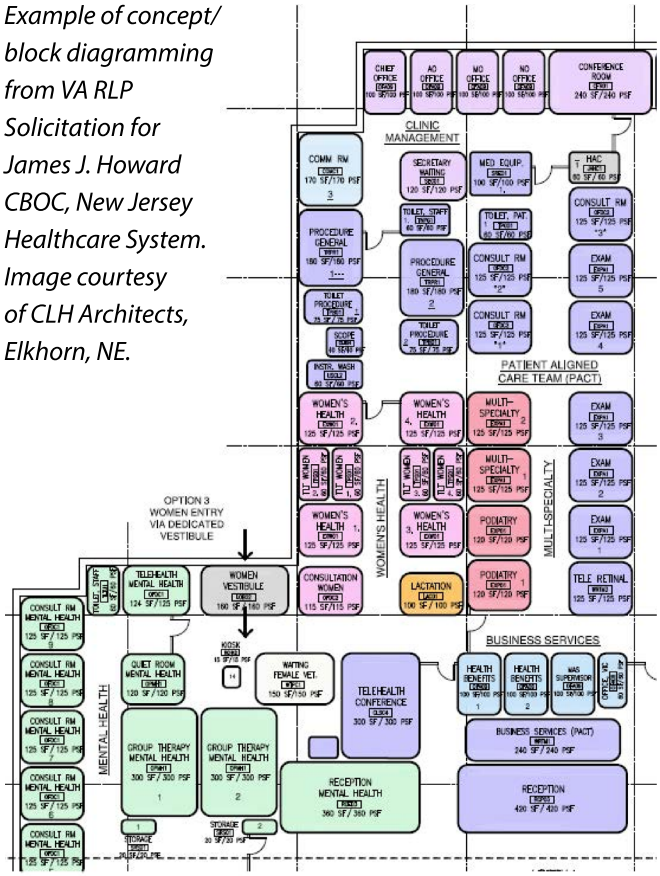
Indoor Air Quality

VA staff and the HIDT can impact the indoor air quality of facilities through the products specified. Renovations correcting sick building syndrome also require careful material selections. Material specification is one of the many elements that can impact the health of a building's occupants. The emissions of building and furniture materials, cleaning products, and ventilation of mechanical systems can impact the quality of the indoor air.

Organizational Planning

In early conceptual design for projects, VA staff and the HIDT participating in the development of interior design projects will ask questions to understand organizational planning.

Example of concept/ block diagramming from VA RLP Solicitation for James J. Howard CBOC, New Jersey Healthcare System. Image courtesy of CLH Architects, Elkhorn, NE.



The HIDT should request a copy of the operational diagram/ narrative and facility master plan if one has been developed. This will describe how the department will function within a facility.

Organization planning topics that a designer should ask about include:

- Operational assumptions
- Patient volumes and the average length of stay
- Patient flow through the department
- Staff volumes - the number of people working in the department
- Key rooms in the department
- Internal and external functional adjacency
- Patient, family, and staff needs

- Mental Health Clinic
- Building Support Area (Lessor)
- Lobby / Reception Area
- Women's Health (PACT) Clinic 2
- Patient Aligned Care Team (PACT) Clinic 2
- Support Area
- Clinic Management
- Multi-Specialty Clinic
- Staff Support Area

Patient Experience Enhancements

Patient experience enhancements highlight features that a VA facility offers to improve the patient and visitor experience. Features can describe architectural elements and services available in a building such as privacy alcoves, welcome carts, water refill stations, public and family assist toilets, ATMs, discrete drop-off and pick up, concierge, mail and laundry services, and retail shops among others.

Examples:

- **Hoptel Unit** – Provides short term and sleeping accommodations for Veterans either before or after a procedure.
- **Fisher House** – The Fisher House is a home-away-from-home for families of hospitalized Veterans or Veterans who are in the area to visit a hospitalized member of their immediate family. Also welcome to stay at the Fisher House are Veterans undergoing an extended episode of outpatient therapy who can care for their personal needs or are accompanied by a caretaker.
- **Welcome Carts** – This service is handled by Voluntary Service and supplied through donations from Veteran Groups. The volunteers welcome each inpatient leaving them with items such as a crocheted lap blanket, books, crossword puzzles, toiletries, and other small items.·
- **Entertainment** – These services may include music therapy , arts and crafts, gardening, and external volunteer performances.

Materials Appropriateness

Material selections should be coordinated between HIDT, local VA facility, and maintenance and Environmental Management Service (EMS) departments to ensure internal maintenance and repair capabilities. All projects are required to follow PG-18-14 Room Finishes, Door & Hardware Schedule for all finishes, doors, and hardware. https://www.cfm.va.gov/til/room/RoomFinishes.pdf

When deviating from the requirements of PG-18-14 the VA staff and the HIDT should justify the deviation and build the evidence to support the modification.

Discuss the proposed deviation with the CFM and your project team. Provide all backup material to support the rationale of the deviation. All finish deviations from the PG-18-14 require approval from CFM.

Example:

- Rubber floors, which do not require stripping and waxing and have cushioning comfort qualities plus acoustical properties are being considered by a local VA facility for the OR. The resulting reduction in noise leads to higher patient satisfaction, underfoot comfort qualities, higher staff satisfaction levels, and potentially lower staff injury rates. Life-cycle maintenance costs and long warranties strongly support the consideration of using this type of product.

Budget Realism

Initial project finish budgets must be based on PG-18-14. The HID is responsible for distributing the budget over the public, patient, staff, and service areas with considerations of life cycle costs. The HID must consider aesthetics and fiscal responsibility when developing the design. The VA Cost Estimating Index can be found online at: https://www.cfm.va.gov/cost/index.asp

Material choices must consider the overall project budget and life cycle costs. Categorize budget by floors, walls, and ceiling costs and factor in price escalation for

future material purchases. Consult with the estimator, project team, or contractor to understand the escalation percent per year to be estimated.

Life Cycle Costs (LCC) are the sum of all recurring and non-recurring costs associated with goods, services, structures, or systems. The LCC includes purchase price, installation cost, operating costs, maintenance and upgrade costs, and remaining (residual or salvage) value at the end of ownership or its useful life.

Chapel at Rocky Mountain Regional VA Medical Center, Denver, CO.
Photo courtesy of SOM © Christopher Barrett Photography

2.4 Emerging Healthcare Design

Future Flexibility

It is important for the HIDT to not only design for aesthetic longevity, but also the material performance while planning for future flexibility and adaptability.

Enduring design is a primary goal in the facility's overall interior design scheme. Caution should be taken to avoid design fads. Healthcare designs evolve and are driven by new products and technology. Inspiration for the design story should be focused on technology, evidenced-based design, sustainability, and collaborative resources.

- **Furniture** – Using flexible desking and waiting seating that can adapt to multiple functions while allowing for customizable spaces can increase space-efficiency. Modular furniture can be relocated and reconfigured with minimum disruption. Specifying furnishings with field replaceable components increases flexibility, longevity, and sustainability.
- **Telehealth/Telemedicine** – Uses technology and data to improve the way VA provides patient-centered care to Veterans. This technology connects Veterans with VA care teams and specialists, no matter the distance.
- **Teleworking** – A work arrangement under which an employee performs selective duties and responsibilities, from an approved alternate worksite.
- **Staff Hoteling** – A method of office management in which workers dynamically schedule their use of shared workspaces.

Telehealth and Staff Hoteling examples at VAMC Salt Lake City, UT. Photos courtesy of VA.

Safety

Design to increase safety by applying the following factors:

- Reduce noise by removing or moving the sources and improve acoustics by providing sound absorbing design elements and materials
- Provide sightlines and visibility from reception desks/check-in desks to waiting areas
- Reduce the likelihood of falls through path lighting, finishes, and handrails
- Provide intuitive wayfinding through the use of visual clues and signage
- Reduce staff injury by incorporating patient lifts or utilizing mobile transfer equipment

Example of patient visibility to the exterior window resulting from inboard patient room design. Patient Room Renovation/Upgrade at the VA Northern Indiana Health Care System, Fort Wayne, IN.
Photo courtesy of American Structurepoint, Inc. A/E, Columbus, OH.

Minimizing Stress

Humanizing the environment and stress reduction can be achieved by incorporating positive distractions.

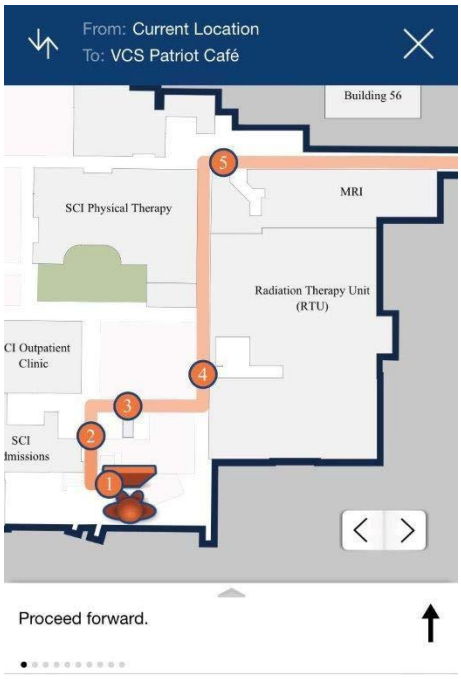
- Promoting interaction with nature through the quantity and size of windows and access to healing gardens when possible
- Including music to distract from noises in the facility
- Creating centralized and barrier free nurses stations, waiting areas without direct views into restrooms, and locating staff lounges away from exam rooms

Ambient experience MRI aimed at reducing patient stress during the MRIs at the Omaha VAMC.
Photo courtesy of CLH Architects, Elkhorn, NE.

2.5 Technology

Technology is constantly changing the healthcare environment and is a driver for healthcare design.

- **Patient Engagement Software** – Software is intended to educate or entertain customers and can provide a service such as food ordering, educational videos, wait times, or a calendar for patients and families to see when treatments are scheduled.
- **Robotics** – VA facilities may use a variety of robotics in surgery, housekeeping, or prescription dispensing system. Automated Guided Vehicles (AGV) may affect corridor widths and floor material specifications and may have acoustical impacts. During design, verify current and future use of technology.
- **Computer Equipment** – Coordinate with OI&T to ensure equipment and associated IT requirements are identified and included in the design plan.
- **Mobile Technology** – Workstations on Wheels (WOW) are a common form of mobile technology in hospitals. Coordinate what technology is being planned, as this may affect the design of corridors and may require alcoves with power for docking and charging.
- **Wireless Technology** – The term wireless technology is generally used for mobile information technology equipment. It encompasses cellular telephones, internet access for tablets, laptops, and wireless networking and must be coordinated with the OI&T. All VHA facilities are required to have wireless that will not be available to the patients and families. The facility may have two distinct wireless networks, one for internal VA and one for the public/guests. Hardwired phones should also be planned for redundancy since it may be the most reliable in an emergency.
- **Telehealth/Telemedicine** – Innovation in technology makes it easier for the Veteran to connect to high-quality VA care. VA has expanded new cutting edge digital health tools at VA sites across the country. Telehealth/Telemedicine allows healthcare professionals to evaluate, diagnose and treat Veterans in remote locations using telecommunications technology
- **Wayfinding** –The quality and effectiveness of digital signage and wayfinding technologies are ever-evolving. Development of UV resistant materials, improvements in L.E.D. lighting as well as animated and interactive wayfinding systems are just a few of the new innovative solutions for complex wayfinding issues, signage solutions, and designs. Reference the Integrated Wayfinding and Recommended Technologies section in the VA Signage Design Manual. https://www.cfm.va.gov/til/signs/WayfindingNewChapter2.pdf



Mobile Wayfinding Application - James A. Haley Veterans' Hospital - Tampa, FL.
Photo courtesy of Department of Veterans Affairs

2.6 Core Elements & Other Considerations

Architecture and interior design involve three core elements: a Vision and Intent Statement, decision criteria, and the concepts. These core elements should be defined in the early stages of every design project. VA staff and the HIDT should develop and share the information with the team and stakeholders, and garner appropriate approvals for the inclusion of any specialized design features.

Main Lobby/Information Desk at Orlando VA Medical Center, Orlando, FL.
Photo courtesy of RLF Architecture Engineering Interiors, Orlando, FL.

Vision and Intent

VA staff and the HIDT must develop a Vision and Intent Statement for every Major VA construction project that nurtures a sense of ownership from within the decision-making body. It minimizes personal opinions through a goal and mission-driven process.

Sample Statements

- Patient satisfaction and safety
- Covered exterior entry points
- Spatial adjacencies with the Veteran in mind; restrooms and customer service points located near the front entry
- Wayfinding following progressive disclosure
- Enduring design that avoids design fads

Decision Criteria

Developed by VA staff and the HIDT, decision criteria focus on priorities that project design ideas can be judged against. Each criteria should have clear descriptions of the desired result.

Sample Decision Criteria

- Create an Emotional Supportive Environment - A calm, healing environment that is patient-friendly, designed to a human scale that gives the users a confident experience.
- Create a Memorable Experience - The use of architectural elements, finishes, imagery, or nature creates a memorable experience.
- Facilitate Navigation - Promote wayfinding, orientation, ease of movement, through an understanding of the visitors' perspective of spatial relationships manifested by the architecture to lighting and interior finishes.
- Create an Intuitive Orientation to Spaces- Providing visibility to outside creates a sense of direction.
- Establish Unique Identities - Outpatient facility versus a hospital. Sense of academic knowledge and strength of VA.
- Creates Durable and Easily Maintained Spaces - Appropriate materials and finishes.

Concepts

Concepts explore how to execute the vision and intent. VA design staff and the HIDT should provide the end-user with three concepts in every project. Each concept should have a descriptive title to better describe the concept. The approved concept will anchor the project and sell the final design idea. The HIDT should document the approved concept and share with others to build consensus and gain design understanding.

Design Approach

Drawings translate the aforementioned narrative concepts into two or three-dimensional illustrations of the design. Three-dimensional drawings, sketches, or renderings can make the design concept come to life, as seen in many of the VA Design Guides. Some audiences may understand the design story better with sketches, renderings, 3-D modeling, and virtual presentation that provide greater clarity in communicating the design direction.

Team Structure

The structure of the VA project team varies by project. The Healthcare Interior Designer has a very important role in the design process of the project team. The VA Healthcare Interior Designer is the authority on all things related to materials, finishes, and overall design considerations. Although some projects may not appear to impact interior design, such as parking garage projects, MEP, and infrastructure upgrades, the VAHID must still be consulted to advise on impact moves, phasing, and project area

decommissioning. The following is a list of project types and examples of the team members associated with each project:

Major Construction:
The project team is made up of the medical center administration, contracted Architectural/Engineering team, VA Healthcare Interior Designer, CFM representatives, VA CO, COR, VA engineer/project manager, and departmental stakeholders.

Minor, NRM, and Other Project Types:
The project team is made up of the medical center administration, contracted Architectural/Engineering team, VA Healthcare Interior Designer, VA CO, COR, VA engineer/project manager, and department stakeholders.

Ideas and Innovation

Project design goals should strive for innovation and the exploration of new ideas in the healthcare and design industry.

Healthcare design is becoming more sophisticated in many areas from the execution of details to the application of studies and theories. Innovation in designing for more staff/functions with less space, staying inside the lines the design guides/manuals sometimes cannot accommodate, designing for pandemic, designing for a unique patient population with highest non-ambulatory rates in the healthcare industry. Innovation requires research and continued education in areas such as studying the availability of local materials and emerging design and construction methods. Innovation is so much more than this for interior design.

Interior Finishes Options and Presentation

A minimum of three interior finish design options based on direction by the VA Healthcare Interior Designer, PG-18-14 Room Finishes & Door Hardware Schedule, and local facility standards should be explored as a part of the IDP/design process and presented to the project team for the final interior finish selection evaluation. The VAHID should select finishes based on stakeholder feedback, facility standards, and cohesion with adjacent spaces and future renovations. Stakeholder input is necessary but is not the final authority. Interior finish design options may also be required to simplify design execution or cut project costs as the project progresses during value engineering (VE).

Presentations are the key to conveying design ideas. VA staff participating in design projects should expect presentation boards and material samples. Refer to the project-specific design guides for presentation outlines.

Traditional color/material selection palette.

Solutions and Final Presentation

A design solution is an outcome that results from exploring design options and building approval consensus. Presentations of the design options in the early stages of planning, programming, and schematics as well as the finalized design documents with complete specs are the key to selling the design ideas to the project team.

Larger samples of all finish materials must be included in the final presentation. For submission requirements, refer to PG-18-15, notes Section A/E submission of Volume C, Minor, Major, and NRM page 19 Letter D refer to Appendix A and to VA TIL.

Virtual Planning - Primary Care Clinic at VA Southern Nevada Healthcare System - Las Vegas, NV.
Photo courtesy of Department of Veterans Affairs.

Reporting and Approval Structure

Every VAHID and HIDT must understand and follow the unique approval structure for the various project types.

Approval must be obtained from the VA project design team in order to implement the interior design direction in the construction. Presentations are the keys to selling design ideas and goals that can be shared with the project team for final approval. The consensus from the VA project team may affect the final approval to implement. The ultimate goal is to get document approval final sign-off to use as a guiding document throughout the project life cycle and as team members change.

Standard Details

VA Standard Details include scale drawings of many specific items and conditions. Developing standard details, presentation formats, and specifications benefit the HID in that it will allow more time for design. VA's standards can be found in the Technical Information Library on the Standard Details page (https://www.cfm.va.gov/TIL/sDetail.asp)

Inpatient Room at Cape Fear Valley Hoke Hospital.
Photo courtesy of Apogee - RPA JV, LLC

2.7 Toolbox

General

An interior design toolbox should be developed to establish facility standards. The toolbox components include, but are not limited to, wall protection, ceilings, lighting, color theory, patterns and texture, materials, casework, signage and wayfinding, and furniture/textiles. These standards describe the features of the building component, as well as where and when to use the component.

Facility standards implemented by the various VA facilities are an important component of the overall interior design strategy developed by the VAHID. Facility standards create an environment that enhances the facility's public image which promotes Veteran and employee morale while implementing the Toolbox strategies that are cost-effective, environmentally sensitive, easy to maintain, and support life safety. Facility standards must comply with the PG-18-14 Room finishes, Door and Hardware Schedule, Master Construction Specifications, and other VA criteria located on the VA TIL. The VAHID is the subject matter expert and guiding authority on facility finish standards. PG-18-14 finish deviations must be approved by CFM.

Healthcare grade furniture, fixtures, and accessories must comply with all ANSI/ BIFMA and VHA requirements. These items must be designed and specified to support maximum flexibility. Facilities often utilize a variety of cleaning chemicals. All finishes specified for VA facilities must withstand the standard operating procedures for cleaning and disinfection and the chemicals utilized by EMS staff. The VAHID should consult with EMS leadership to understand which chemicals are being used to determine the finishes and textiles that can withstand regular cleaning and disinfection.

Wall Protection

Wall protection systems shield a building's architecture from excessive wear and abuse as well as contributing to ease of maintenance, patient safety, and infection prevention. Wall protection can be used to enhance the environment by using newer innovations such as digital image printing or wood grain patterns. Images and patterns used on wall protection systems can also contribute to navigation, wayfinding, and overall patient perception of high-quality health care. Refer to Wall and Door Protection in Division 10 - Specialties of the Master Construction Specifications (https://www.cfm.va.gov/TIL/spec.asp#10). Specialized design specifications for high use service areas need to be given. Architecture in these areas may require full protection from damage by carts and equipment.

CLC - Wall Protection at VA Loma Linda Healthcare System - Loma Linda, CA.
Photo courtesy of Department of Veterans Affairs.

Ceilings

Ceilings are one way to achieve noise control within spaces. Noise control is achieved through absorption, blocking, and covering. Ceilings provide the acoustical sound attenuation required by paying close attention to the NRC (Noise Reduction Coefficient), CAC (Ceiling Articulation Class), and AC (Articulation Class). Standardization of ceiling tile types decreases inventory requirements as well as

facilitates ease of maintenance. Ceilings, fixtures, lighting solutions, and architectural elements support effective wayfinding strategies.

Ceilings provide multiple functions and greatly define a space. The ceiling system plays an important part in the overall building function. The ceiling system can contribute to energy savings. Design features incorporated into the ceiling help create a warm and inviting setting that appeals to patients in high-stress areas.

The ceiling system adds these qualities to the healing environment:

- Enhances acoustic qualities and decreases unwanted noise
- Uses durable materials that hold up to infection control and cleaning measures
- Enhances natural lighting and its attributes
- Contributes to sustainability
- Specialized ceilings contribute to patient safety and welfare
- Enhances wayfinding attributes

ABOVE: MRI Suite at VAMC Boise.
Photo courtesy of Department of Veterans Affairs.

RIGHT: Boulevard at VA Sheridan, WY.
Photo courtesy of CLH Architects.

BELOW: Lobby at Affinity Health Center - Rock Hill, SC.
Photo courtesy of Apogee - RPA JV, LLC.

Lighting

Quality of light affects the healing environment. Lighting can and does impact patient outcomes and facility safety.

The lighting system adds these qualities to the healing environment:

- Contributes to a patient's circadian rhythm
- Leads to reductions in medical errors, pain, stress, and depression
- Illuminates architectural details which contribute to wayfinding

Refer to the Lighting Design Manual (https://www.cfm.va.gov/til/dManual/dmLighting.pdf)

Reception Area at Madison Regional Health System - Madison, SD. Photo courtesy of Apogee - RPA JV, LLC

Color Theory

Color theory is an important aspect of healthcare design. Understanding the appropriateness of colors and applications and their effect on patients is vital. Color is a fundamental element of environmental design.

Color selection is impacted by:

- Psychological, physiological, and social reactions
- Aesthetic and technical aspects of the built environments
- Geographical location, culture, age, etc.
- Type of activities that may be performed
- Nature and character of the light sources
- Size and shape of the space

The HID establishes the facility's color palette in conjunction with the VA project team but the final color/finish pattern direction and selection approval comes from the VAHID who has the ultimate authority as the subject matter expert.

Senior Living Facility, Jacksonville, FL. Photo courtesy of WBRC Architects/ Engineers, Lakewood Ranch, FL.

Pattern and Texture

Pattern and texture are important in the development of the design for healthcare facilities. Pattern creates an illustrative perception and should be carefully chosen as to how it will impact the space. Pattern is often applied using wall coverings, tile, carpeting, and other graphic elements. Texture refers to the physical quality of the surface. Pattern and texture can also define surfaces, impact scale, convey a design style, and add visual interest to a space. Pattern and texture are elements to incorporate in a space whether in bold application or small amounts. Use pattern and texture to create areas of interest to guide the eye to particular focal points.

Waiting Area at Affinity Health Center - Rock Hill, SC.
Photo courtesy of Apogee - RPA JV, LLC.

Materials

Material selection and placement will impact the perception of the facility. When designing the interiors, the Interior Designer selects materials considering the placement related to durability, budget, comfort, safety, and flexibility.

Impacts of material selection:

- Wallcoverings contribute to acoustics and add visual interest through texture and pattern.
- Flooring selections take into consideration application appropriateness and maintenance requirements. Examples include:
- Carpet tile offers flexibility, hides wear, and impacts acoustics.
- Low maintenance floors withstand heavy foot traffic and hide wear.
- VCT is no longer approved by VA and has been substituted with more sustainable and low maintenance alternatives.
- Healthcare grade woven and coated textiles are required.

Refer to PG-18-14 for the most current finish/ material placement guidelines.

Hematology/Oncology Cancer Treatment Center Renovation - James H. Quillen VAMC, Mountain Home, TN.
Photo courtesy of American Structurepoint, Inc. A/E, Columbus, OH.

Casework, Millwork and Modular

ICU - James H. Quillen VAMC, Mountain Home, TN.
Photo courtesy of Department of Veterans Affairs.

Designing casework requires project team collaboration. User input is vital to understand the functional needs of the casework along with care and maintenance requirements. The architect will indicate the proper structural support as required for each location of casework.

Casework (either millwork or modular) has various construction types. Casework may contain shelves or drawers for storage. Doors are sometimes fitted to enclose the storage spaces. Examples of casework are bookcases, desks, chests, display cases, and cabinets.

Millwork, as it relates to cabinetry and work stations, is a type of custom casework construction that offers more design innovation but offers very little user flexibility and is typically not reused.

Modular casework versus traditional millwork may have many benefits that can, over the life cycle, outweigh the initial cost. Modular casework can be reused and is a great choice for areas that are subject to change. Modular casework also has the flexibility of being reconfigured in the field with no construction debris and minimal impact on space downtime.

Emergency Department at Cape Fear Valley Hoke Hospital - Raeford, NC.
Photo courtesy of Apogee - RPA JV, LLC.

Signage and Wayfinding

Signage and Wayfinding are key elements that contribute to the successful design of a facility. A well-rounded signage and wayfinding system utilizes evidence-based design principles that incorporate industry best practices while adhering to the VA Signage Design Manual (https://www.cfm.va.gov/til/spclRqmts.asp#SIGN). This system enhances the healthcare environment and experience for the patients, visitors, and staff, improves employee morale, and reduces patient anxiety. Wayfinding is critical for patients, visitors, and staff.

VAMC Boston, MA.

Signage should be minimal and intuitive, following progressive disclosure and the design principle of "less is more".

Wayfinding involves architectural elements such as graphics, color, patterns, and textures, that when combined, aid in the navigation of the space. Wayfinding provides building orientation, navigational clues, and destination boundaries. The wayfinding solution incorporates a collection of sign types that support inherent wayfinding clues found within the architectural elements.

ABOVE: VAMC San Francisco, CA
RIGHT: VAMC Boston, MA

Furniture/Textiles

VHA has standard furniture specifications based on minimum technical requirements. These standards take into account the following attributes:

- Aesthetic
- Budget
- Ease of maintenance
- Infection prevention and control
- Modularity and flexibility
- Quality and construction methods
- Finishes

VA encourages using a variety of textiles to enhance the interior environment and patient comfort. These can include both woven and coated options. All textiles specified for VA facilities must withstand routine cleaning utilizing healthcare-grade cleaners and disinfectants. Other common considerations include:

- Abrasion resistance
- Colorfastness
- Hydrolysis testing/rating
- Moisture barriers
- Recycled content/recyclability
- Warranties

Women's Clinic Check-In at VA Southern Nevada Healthcare System - Las Vegas, NV.
Photo courtesy of Department of Veterans Affairs.

Tools for Tracking Cost

Material Disbursement

Tracking the cost of finish materials throughout a space or building is important to ensure proper prioritization of budget distribution this process is executed by the HID and would not fall to the VAHID.

Methods include:

- Tracking the initial materials budget allowance by product.
- Tracking the installation and final product cost.
- Tracking the initial cost and final cost difference of each product to watch inflation and budget targets.

Cost per Square Foot:

- Track project installation costs per project.
- Track the means of material constructions. This helps VA staff participating in the development of interior design projects to budget correctly for material allowances in the beginning of a project.

Life Cycle Costs

- Track the initial cost and final cost difference of each product to watch inflation and budget targets.
- Collaborate with environmental management, maintenance, and construction and facilities management to understand cleaning, maintenance, and repair costs.

2.8 VA Facility-Level Interior Design Standards

Each VA facility is encouraged to develop and routinely update a unique facility standards program. CFM has established construction material performance requirements to which the local facility standard should comply. A/E HID coordinates with the VAHID to become familiar with the established facility design standards prior to beginning design. The VAHID holds ultimate approval authority for final finish plans and specifications.

Reception/Registration/Waiting at Orlando VA Medical Center, Orlando, FL.
Photo courtesy of RLF Architecture Engineering Interiors, Orlando, FL.

2.9 Acquisition of Artwork and Decorative Items

VA Directive 7531 establishes policy and the approval process for the procurement of artwork, decorative furnishings, and decorative items for all VA facilities and locations, including, but not limited to new space acquired by major and minor construction and leasing, as well as existing space. This directive requires that VA exercise responsibility to be a good steward of public funds.

Architectural artwork elements planned, designed, or installed exceeding $1,000.00 using construction funding will be reviewed for approval using the threshold limits based on the estimated line item cost.

Complete details of VA Directive 7531 can be found at: http://vaww.hefp.va.gov/resources/va-directive-7531-acquisition-artwork-decorative-furnishings-and-decorative-items

Iowa Veterans Home, Marshalltown, IA.
Photo courtesy of Schemmer and Associates.

Section 3: Construction and Projects

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- Healthcare Environment and Facilities Programs (HEFP)
- Capital Asset Management (CAM)
- Healthcare Engineering (HE)
- Environmental Programs Service (EPS)
- Occupational Safety & Health (OSH)
- Strategic Capital Investment Process (SCIP)

3.1 Construction and Projects Support

VHA Central Office provides VA medical facilities with support throughout all phases of projects and renovations. Below introduces the Healthcare Environment and Facilities Programs and the program offices that fall within and their disciplines of responsibility. More information on these VHA program offices can be found at http://vaww.hefp.va.gov/.

Healthcare Environment and Facilities Programs (HEFP)

Healthcare Environment and Facilities Programs (HEFP) provides effective and innovative leadership, guidance, oversight, professional development, and solutions in the areas of capital asset management; healthcare engineering, environmental management; and safety & occupational health that continually improves the healthcare environment.

Capital Asset Management (CAM)

Capital Asset Management (CAM) is a key component to managing the capital infrastructure improvement needs of a medical center. Knowledge of the capital programs is critical to successfully providing the required facilities to deliver high-quality care to the Veterans we serve. Resources are designed to help Engineers, Capital Asset Managers, Planners, and anyone else involved in Capital Asset Management find useful information relating to VHA's Capital Programs.

Healthcare Engineering (HE)

Healthcare Engineering (HE) is a broad and complex engineering field. Managing a medical center's infrastructure, technology, and compliance requires management skills, engineering healthcare knowledge, and great communication skills. Resources are designed to help engineers find useful information to make these complex tasks easier. Chief Engineer/Engineers are involved with planning, execution, and day-to-day operations.

Environmental Programs Service (EPS)

Environmental Programs Service (EPS) is responsible for the development and governance of policies for the provision of a safe, sanitary, healing environment for Veterans Health Administration (VHA) facilities and accompanying provisions of governance for those respective programs. The program carries out a wide range of high-level management activities in the areas of environmental sanitation, integrated pest control, textile care processing, textile management, interior design, waste management, and recycling.

Occupational Safety & Health (OSH)

Occupational Safety & Health (OSH) is responsible for management and oversight of Veterans Health Administration (VHA) programs related to Occupational Safety and Health, Green Environmental Management System (GEMS), Fire Protection and Life Safety, VA Fire Department Operations, Industrial Hygiene, Industrial Safety, Construction Safety, and Workers' Compensation Compliance. The Office reports to the Deputy Under Secretary for Health for Operations and Management (DUSHOM) (10N), through the Assistant Deputy Undersecretary for Health for Administrative Operations (10NA).

Strategic Capital Investment Process (SCIP)

The Strategic Capital Investment Planning (SCIP) was developed to improve capital planning. This process is used to develop the VA budget submission 2 years in advance. SCIP is comprised of four components; Gap Analysis, Strategic Capital Assessment, Long-Range Action Plan, and Business Case Applications.

Section 4: Accreditation and Regulatory Standards

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- The Joint Commission (TJC)
- Commission on Accreditation of Rehabilitation Facilities (CARF)
- Long Term Care Institute (LTCI)
- Health Insurance Portability and Accountability Act (HIPAA)
- VA Codes, Regulations, Standards, Directives, Executive Orders, Alerts, and Memorandums

4.1 Accreditation and Regulatory Standards

The VA Healthcare Interior Designer and the A/E Healthcare Interior Design team must be aware of accreditation and regulatory standards.

The Joint Commission (TJC)

The Joint Commission (TJC) is an independent, not for profit organization that accredits and certifies healthcare organizations in the United States and is recognized as a symbol of quality that reflects an organization's commitment to meeting certain performance standards. https://www.jointcommission.org/en/

Commission on Accreditation of Rehabilitation Facilities (CARF)

CARF is a private, not-for-profit organization that sets quality standards, evaluates the quality of services, and accredits rehabilitation facilities. http://www.carf.org/home/

Long-Term Care Institute (LTCI)

LCTI is a not-for-profit corporation that is an external quality monitor focused on performance improvement and compliance program development and review in long term care, hospice, and other residential settings. https://www.ltciorg.org/

Health Insurance Portability and Accountability Act (HIPAA)

HIPAA Privacy regulations require health care providers and organizations, as well as their business associates, to develop and follow procedures that ensure the confidentiality and security of protected health information (PHI) when it is transferred, received, handled, or shared. https://www.hhs.gov/hipaa/index.html

VA Codes, Regulations, Standards, Directives, Executive Orders, Alerts, and Memorandums

VA Healthcare Interior Designers and A/E Healthcare Interior Designers are expected to meet the latest codes, regulations, and standards as a basis of design; and, incorporate all applicable VA directives, executive orders, alerts, memorandums, and handbooks.

Section 5: Glossary

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5.1 Glossary of Terms

Accessibility: Features of buildings or spaces that enable use by people regardless of their level of ability.

Approval Structure: The process required to obtain authoritative concurrence for projects. Each VA facility may have a different approval structure.

Benchmarking: The technique of comparing an organization's performance against the "best in the business," inside or outside government, to gauge room for improvement and progress toward excellence.

Best Practices: In an era of innovation, this term refers to the identification and dissemination of proven techniques pioneered by various offices that result in improved efficiency and public service.

Branding: A unique set of associations that an organization aspires to create or maintain. These associations represent what the organization should stand for and imply a potential promise to customers.

Building Code: Ordinances or regulations, controlling the design, construction, alteration, repair, quality of materials, use and occupancy, and related factors of any building or structure within its jurisdiction.

Building Types: Describes the function or form of a facility; however, it is used primarily to describe function of a facility in the Interior Design Manual. Examples of building types in this manual include medical centers, community living centers, and outpatient clinics.

Concept: The general idea behind a design that is later converted into variables to be measured.

Contracting Officer (CO): An individual with the authority to enter into, administer, and/or terminate VA contracts, and make related findings and determinations.

Cost: The total spent for goods or services including money, time, and labor.

Criteria: The standards, measures, or expectations used in making an evaluation, decision and/or verification.

Culture: The word culture comes from the Latin root colure (to inhabit, to cultivate, or to honor). In general, it refers to human activity; different definitions of culture reflect different theories for understanding, or criteria for valuing, human activity.

Daylighting: The passive solar practice of placing windows or other transparent media and reflective surfaces so that, during the day, natural sunlight provides effective internal illumination.

Decision Criteria: The standards, measures, or expectations used in making an evaluation, decision and/or verification.

Design-Build: A project delivery method in which the organization contracts directly with one entity to provide both the design and construction of the project.

Design Criteria: The explicit goals that a project must achieve in order to be successful.

Design Response: A physical solution that meets the criteria established during the design process.

Design Story: A compelling explanation as to how a design was developed and how the design meets the goals established at the beginning of the design process.

Emerging Healthcare Design: Design solutions that address growing trends in healthcare design.

Equipment: Machinery designed to aid in the diagnosis and treatment of medical problems. Equipment does not include furniture, such as desks, chairs and tables.

Evidence-Based Design: Design which hypothesizes the expected outcomes of design interventions and subsequently measures the results.

External Resources: Sources of information that are not a part of the Department of Veterans Affairs. External resources cited in the Interior Design Manual include industry associations and institutions as well as private organizations.

FF&E (Furniture, Fixture and Equipment): Components that complete an interior build-out or activation.

Fixtures: Built-in surfaces, overhead/wall lighting, plumbing fixtures, etc. that are attached to real property in a manner that it becomes part of the property.

Flexibility: Characterized by a ready capability to adapt to new, different, or changing requirements.

Furniture: The collective term for the movable objects which support the human body (seating furniture and beds), provide storage, and hold objects on horizontal surfaces above the ground. Furniture also includes items such as desks and tables. Medical equipment is not considered furniture.

Goals: A tangible statement of what a project should achieve, stated in terms of facts.

Healing Environment: An environment that has a nurturing or therapeutic effect.

Indoor Air Quality (IAQ): Refers to the quantitative level of contaminations in the air as well as the qualitative level of satisfaction of those exposed to the air. Standards for acceptable IAQ have been developed by the U.S. Environmental Protection Agency.

Innovation: The process of converting knowledge and ideas into better ways of doing business or into new or improved products and services that are valued by the community.

Interior Design: A distinct profession with specialized knowledge applied to the planning and design of interior environments that promote health, safety, and welfare while supporting and enhancing the human experience.

Internal Resources: Documents and sources of support that can be found within the structure of the Department of Veterans Affairs.

LEED: The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is the nationally accepted benchmark for the design, construction, and operation of high-performance green buildings.

Life Cycle Cost: A measurement of understanding the cost of a product initially, the cost to maintain the product, and the lifetime replacement cost. Sometimes called a "cradle-to-grave analysis" which is the initial product cost to the final step of returning the product to its original or next use state.

Living Document: Traditional publishing requires changes or modifications to content presented in subsequent editions, while a living document is enhanced in a manner producing more frequent versions. Documents of this nature become collections of information, indexed and interwoven like an ecosystem. A website is an example of a living document. In a living document, a topic is covered more completely over time, materials are re-indexed, and most often the entire content base is searchable.

Maintenance: The ability of a product or material to be kept to its proper condition, and the work required to sustain that condition over the life of the material.

Major Construction: Construction projects that have a total value in excess of $20 million.

Material Disbursement: Tracking the allocation of materials throughout a project.

Minor Construction: A stand-alone project on land owned by the Federal Government, which expands the existing facility square footage by more than 1,000 GSF and has a dollar threshold below $20 million.

Mission: Enduring statements of purpose. A formal summary of the aims and values of a company, organization, or individual.

Mobile Technology: Health technologies that improve communication and enhance the integration of care processes. These technologies include, but are not limited to, mobile phones and tablets, remote monitoring devices, telehealth systems, and workstations on wheels (WOWs).

Patient-Centered Care: Patient-centered care emerged as a full-fledged medical model in the 1970s and involves treating patients as partners, allowing them to assist in planning their health care and encouraging them to take responsibility for their own health.

Patient Profile: The unique characteristics and needs of the various Veteran patient users.

Plans: Architectural and Engineering drawings for construction.

Positive Distraction: An element that produces positive feelings, effortlessly holds attention and interest, and therefore may block or reduce worrisome thoughts.

Principle: A basic generalization that is accepted as true and that can be used as a basis for reasoning or conduct.

Programming: The research and decision-making process that identifies the scope of work to be designed.

Real Property: Real estate. Physical property that is permanent and non-removable in nature. Land and appurtenances, including anything of a permanent nature such as structures, trees, minerals, and the interest, benefits, and inherent rights thereof.

Reporting Structure: Authority relationships in an organization or project team.

Safety: A judgment of the acceptability of risk (a measure of the probability of an adverse outcome and its severity) associated with a given situation.

Space Planning: The analysis and design of spatial and occupancy requirements, including, but not limited to, space layouts and final planning.

Specification: A precise statement of a set of requirements, to be satisfied by a material, product, system or service.

Stakeholder: Any organization or individual who has a vested interest in the product or the activities of any other organization.

Station Level Project: Construction, renovation or nonrecurring maintenance and repair projects where the minor improvement costs are less than $25,000. Total project costs must be less than $150,000.

Sustainable Design: The art of designing buildings to comply with the principles of economic, social, and ecological sustainability. The goal of sustainable design is to reduce consumption of non-renewable resources, minimize waste, and create healthy, productive environments.

Therapeutic Environments: A theory stemming from the fields of environmental psychology, psychoneuroimmunology, and neuroscience that argues the characteristics of the physical environment in which a patient receives care affects patient outcomes, patient satisfaction, patient safety, staff efficiency, staff satisfaction, and organizational outcomes.

Teleworking: A work flexibility arrangement under which an employee performs the duties and responsibilities of such employee's position, and other authorized activities, from an approved worksite other than the location duty station.

Trend: A general direction in which something is developing or changing.

VA Staff: Employees of the Department of Veterans Affairs whom are involved in the design process.

Vision: Framework of an ideal future state.

Wayfinding: The process of navigating a route through and to a given space.

5.2 Acronyms and Abbreviations

A/E.....Architect/Engineer

ADA.....Americans with Disabilities Act

ADAAG.....Americans with Disabilities Act Accessibility Guidelines

BIM.....Building Information Modeling

CAC.....Ceiling Articulation Class

CAD.....Computer Aided Design

CAM.....Capital Asset Management

CARF.....Commission on Accreditation of Rehabilitation Facilities

CFM.....Office of Construction & Facilities Management

CO.....Contracting Officer

COR.....Contracting Officers Representative

CPM.....Critical Path Method

CSI.....Clinical Specific Initiative

CSI.....Construction Specifications Institute

DUSHOM.....Deputy Under Secretary for Health for Operation and Management

EBD.....Evidence-Based Design

EMS.....Environmental Management Services

EPS.....Environmental Programs Service

FAR.....Federal Acquisition Regulation

FF&E.....Furniture, Fixtures, and Equipment

GEMS.....Green Environmental Management System

HCE.....Health Care Engineering

HEFP.....Healthcare Environment & Facilities Programs

HID.....Healthcare Interior Designer

HIDT.....Healthcare Interior Design Team

ICU.....Intensive Care Unit

IDIQ.....Indefinite Delivery, Indefinite Quantity

JSN.....Joint Schedule Number

LEED.....Leadership in Energy and Environmental Design

LTCI.....Long-Term Care Institute

MRI.....Magnetic Resonance Imaging

MTR.....Minimum Technical Requirements

NCIDQ.....National Council for Interior Design Qualification

NRM.....Non-Recurring Maintenance

OI & T.....Office of Information and Technology

OSH.....Occupational Safety & Health

PDF.....Portable Document Format

PRC.....Project Room Contents

PTSD.....Post-Traumatic Stress Disorder

SCI.....Spinal Cord Injury

SCIP.....Strategic Capital Investment Planning

TIL.....Technical Information Library

TJC.....The Joint Commission

VA.....Department of Veterans Affairs

VAAR.....VA Acquisition Regulation

VACO.....Veterans Affairs Central Office

VAHID.....VA Healthcare Interior Designer

VAMC.....VA Medical Center

VA SEPS.....VA Space and Equipment Planning System

VHA.....Veterans Health Administration

VHACO.....Veterans Health Administration Central Office

VISN.....Veterans Integrated Service Network

Section 6: Resources

6.1 Internal Resources....60

6.2 External Resources....62

6.1 Internal Resources

Accessibility.....https://www.cfm.va.gov/til/accessibility.asp

A/E Submission & Review Requirements.....
https://www.cfm.va.gov/til/aeDesSubReq.asp

Architectural Barriers Act.....
https://www.access-board.gov/the-board/laws/architectural-barriers-act-aba

Construction Document Information.....
https://www.cfm.va.gov/contract/constdoc.asp

Design Alerts.....https://www.cfm.va.gov/til/alert.asp

Design and Construction Procedures.....https://www.cfm.va.gov/TIL/cPro.asp

Design Guides.....https://www.cfm.va.gov/til/dGuide.asp

Design Manuals.....https://www.cfm.va.gov/til/dManual.asp

Environmental Programs Service/Interior Design Program (VA Access Only).....
http://vaww.hefp.va.gov/resources/eps-interior-design-program-guide

Environmental Program Service/Patient-Centered Care Improvement Guide (VA Access Only).....
http://vaww.hefp.va.gov/resources/eps-patient-centered-care-improvement-guide

Energy Conservation and Sustainability..... https://www.cfm.va.gov/til/sustain.asp

Environmental Compliance.....https://www.cfm.va.gov/til/etc/NEPAGuidance.pdf

Equipment Guide List PG-18-5.....https://www.cfm.va.gov/TIL/equip.asp

Fire Safety.....https://www.cfm.va.gov/TIL/spclRqmts.asp#FS

Healthcare Environment and Facilities Programs (VA Access Only).....
http://vaww.hefp.va.gov/

Master Construction Specifications PG-18-1..... .....
https://www.cfm.va.gov/til/spec.asp

National CAD Standards and Details.....https://www.cfm.va.gov/til/cPro/cPro.pdf

Physical Security.....https://www.cfm.va.gov/TIL/spclRqmts.asp#PHS

Plaques and Seals.....https://www.cfm.va.gov/TIL/spclRqmts.asp#PS

Room Finishes, Doors, and Hardware Schedule PG-18-14.....
https://www.cfm.va.gov/TIL/spclRqmts.asp#room

Space Planning Criteria PG-18-9.....https://www.cfm.va.gov/til/space.asp

Standards/Design Alerts.....https://www.cfm.va.gov/til/alert.asp

Standard Details.....https://www.cfm.va.gov/TIL/sDetail.asp

Technical Information Library.....https://www.cfm.va.gov/TIL/

VA Design and Construction Procedures.....https://www.cfm.va.gov/TIL/cPro.asp

VA Homepage.....https://www.va.gov/

VA Office of Construction & Facilities Management Homepage.....
https://www.cfm.va.gov/

VA Signage Design Manual.....https://www.cfm.va.gov/TIL/spclRqmts.asp#SIGN

VA Space and Equipment Planning System.....https://www.cfm.va.gov/til/space.asp

6.2 External Resources

ADA Accessibility Guidelines.....https://www.access-board.gov/

American Academy of Healthcare Interior Designers.....https://aahid.org

American Hospital Association..... https://www.aha.org

American Institute of Architects.....https://www.aia.org/

American Society for Healthcare Engineering.....https://www.ashe.org

American Society of Interior Designers.....https://www.asid.org

Americans with Disabilities Act.....https://www.ada.gov/

Association for the Health Care Environment.....https://www.ahe.org/

Coalition for Health Environments Research.....https://www.cheresearch.org/

Facility Guidelines Institute.....https://fgiguidelines.org/

Healthcare Design Magazine.....www.healthcaredesignmagazine.com

HIPAA.....https://www.hhs.gov/hipaa/index.html

International Interior Design Association.....http://www.iida.org/

Institute for Healthcare Improvement.....http://www.ihi.org/

Institute for Patient and Family-Centered Care.....https://www.ipfcc.org/

Journal of Health Design.....https://journalofhealthdesign.com

LEED.....https://www.usgbc.org/leed

Modern Healthcare.....www.modernhealthcare.com

National Center of Complementary and Integrative Health.....
https://www.nccih.nih.gov/

National Council for Interior Design Qualification.....https://www.cidq.org/

Planetree.....https://www.planetree.org/

United States Access Board.....https://www.access-board.gov/

U.S. Green Building Council.....https://www.usgbc.org/

Appendix A

U.S. Department of Veterans Affairs

PG 18-15 Spreadsheet v1.0

A/E SUBMISSION REQUIREMENTS FOR VA MEDICAL CENTER

MAJOR NEW FACILITIES, ADDITIONS & RENOVATIONS

PROJECT NAME	PROJECT NUMBER	EFFECTIVE DATE OF SPREADSHEET
0	0	0-Jan-00

Seq. No.	Type	Topic	Description	Concept	SD1	SD2	DD	CD	Submitted	Pending	N/A	Comments
		INTERIOR DESIGN	VA Submission requirements for Interior Design									
ID-1.0		BASIS OF DESIGN	Submit the Basis of Design (BOD) report updated at each submittal with the following information:									
ID-1.1	Report	Narrative	Provide narrative describing interior design concept, how it meets the needs of the users and the facility, and budget considerations. Discuss appropriateness of material and color selections , how they address patient needs, how they relate to the overall building design, and their appropriateness for the geographical location of the facility.		P	F						
ID1.2	Drawings	FFE	Plan FFE based on functional needs and upsize the FFE dimensions to account for changes in FFE final selection at time of procurement and/or installation. Coordinate requirements with VHA and other disciplines as needed.		P	F						
ID-1.3	Report	Inventory Existing Furnishings	Provide inventory list of existing furnishings planned for re-use	F								
ID-2.0		FINISHES	Note all deviations from PG18-14									
ID-2.1	Report	Finish Schedule	Provide Room Finish Schedule in tabular format that identifies room number (both Design & Wayfinding), materials, and color selections for all exposed surfaces. Identify deviations from PG 18-14 in a separate column.			P	U	F				
ID-2.2	Report	Sample Boards	Provide material and finish sample boards. Provide final.			P	F					
ID-3.0		DRAWINGS	As per the VA BIM STANDARD and below. Min. scale = 1/8" = 1'-0" (1:100)									
ID-3.1	Drawings	Public Spaces	Provide fully developed design for major public spaces. Submit elevations, perspectives or other presentations to describe the materials, lighting, and appearance of those spaces.			P	F					
ID-3.2	Drawings	Floor Pattern Plans	Provide patterns for floors			P	F	R				
ID3.3	Drawings	Legend for Room Finishes	Legend showing Room Finishes			P	U	F				
ID-3.4	Drawings	Interior Elevations	Provide interior elevations necessary to convey design intent for finishes and color selections. (See Architectural requirements.)			P	F	R				
ID-3.5	Drawings	Architectural Casework	Coordinate with Architecture			P	U	F				
ID-3.6	Drawings	Millwork and Features	Coordinate with Architecture			P	U	F				

Seq. No.	Type	Topic	Description	Concept	SD1	SD2	DD	CD	Submitted	Pending	N/A	Comments
		INTERIOR DESIGN	VA Submission requirements for Interior Design									
		FURNISHING, FIXTURES & EQUIPMENT (FFE)	Furniture (moveable), fixed furnishings, non-med equipment									
FFE-1.0		Room Data Sheets	Coordinate with Architecture									
FFE-1.1	Drawings		Provide FFE information for Room Data Sheets			P	F					
FFE-2.0		FFE Cut Sheets	Provide in a digital PDF and 8 1/2"x11" format									
FFE-2.1	Drawings		Provide cut sheets for all FFE denoting Acquisition Code (CC, VC, VV). Coordinate cut sheet submittal with other disciplines as required by the project.				P					
FFE-3.0		FFE List	Deliverable: Excel file									
FFE-3.1	Report	Meeting Notes	Document meetings and decisions with VHA staff and stakeholders		P	U	F	R				
FFE-3.2	Report		Refine the SEPS PRC after user meetings with medical staff and incorporate into the Project Equipment List (with all required coding) for all updated Room Contents. Coordinate with Medical Equipment.		P	U	F					
FFE-4.0		FFE Plans	Scale: 1/4" = 1"-0" (1:50)									
FFE-4.1	Drawings		Provide floor plans that graphically indicate locations of proposed and existing FFE. FFE shall be identified by JSN and referenced in the Project Equipment List, and cut sheets. JSNs may be also be shown on other plan types as required by the project.									
FFE-5.0		FFE Budget Estimate	Submit Budget Estimate at each phase with updated information									
FFE-5.1	Report		Provide an FFE budget estimate, using SEPS costs and categorized by Acquisition Code.		P	U	F					
FFE-6.0		Activation Deliverables Package (Electronic Files)	All Digital Files provided to the Activation Team in the formats below									
FFE-6.1	Drawings	Drawings	FFE Floor Plans: 1) Digital PDF; 2) DWG; 3) Native BIM File format.				P	F				
FFE-6.2	Report	FFE List	FFE List: 1) Digital PDF; 2) Excel; 3) Medical Center Web Based Equipment Program (if applicable).				F					
FFE-6.3	Drawings	Room Data Sheets	Room Data Sheets: 1) Digital PDF; 2) DWG; 3) Native BIM File format				F					
FFE-6.4	Drawings	FFE Cut Sheets	FFE Cut Sheets: 1) Digital PDF				F					
FFE-6.5	Report	FFE Budget Estimate	FFE Budget Estimate: 1) Digital PDF; 2) Excel				F					
		SIGNAGE AND WAYFINDING	VA submission requirements for Signage and Wayfinding									
SW-1.0		BASIS OF DESIGN										
SW-1.1	Report	Narrative	Describe wayfinding concept. Adhere to the VA Signage Design Guide. Consider wayfinding needs for the visually impaired (i.e., color, texture, contrast).		P	U	F					
SW-2.0		CATALOG CUT SHEETS										
SW-2.1	Report	Narrative	Describe wayfinding concept. Adhere to the VA Signage Design Guide. Consider wayfinding needs for the visually impaired (i.e., color, texture, contrast).				P	F				
SW-3.0		DRAWINGS (Minimum scale = 1/8" = 1'-0" (3.1750 mm)										

Seq. No.	Type	Topic	Description	Concept	SD1	SD2	DD	CD	Submitted	Pending	N/A	Comments
		INTERIOR DESIGN	VA Submission requirements for Interior Design									
SW-3.1	Drawings	Signage and Wayfinding System	Submit floor plans and sketches indicating signage finishes, and wayfinding features. Show signage in context with floor and wall patterns, lighting, and other elements. Provide supplemental details at larger scale as necessary to fully describe system.				P	F				
SW-4.0		Site Signage										
SW-4.1	Drawings		Signage plan and signage schedule, with site locations, construction details, and sign face graphics.				P	F				

How to Use this Document

1. At the top of the Heading in the GENERAL Tab, enter the Project Name, Project Number, and AE Contract Effective Date.
2. This spreadsheet shall be used to ensure all required content is delivered to VA at indicated milestones.
3. VA will use this document as a review tool to ensure all deliverables are addressed.
4. The PG 18-15 spreadsheet for the required design deliverables should be finalized for the project by the VA and the AE during an assessment phase prior to the project kickoff meeting.
5. Each Tab represents a typical discipline(s) used on a VA project. It remains the responsibility of the AE to coordinate disciplines (e.g., sustainability, cost estimating, building systems, etc.) regardless of where the deliverables are listed in the spreadsheet discipline tabs.
6. The PG 18-15 spreadsheet is locked with the exception of the Submittal Checklist section. Rows can be inserted to the spreadsheet when additional work is required for a project.
7. Work that is not needed can be eliminated by putting "N/A" in the appropriate Submittal Checklist column.
8. PHASE: Each design delivery phase has a column:

    C = Conceptual Design
    SD1 = Schematic Design
    SD2 = Schematic Design (35%)
    DD = Design Development
    CD = Construction Documentation

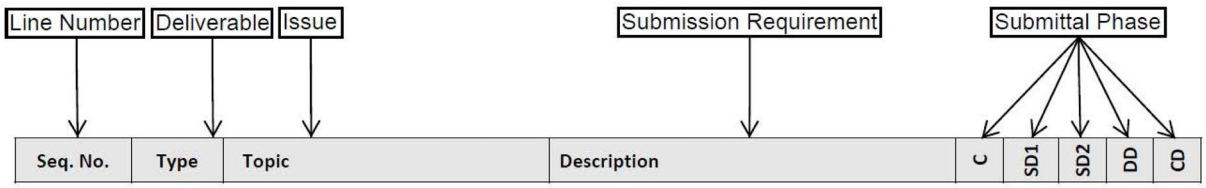
In each phase, the level of development for each submittal element is defined. The levels are:

    P = Preliminary Information
    U = Updated Information
    F = Final Information
    R = Resubmission

9. SUBMITTAL CHECKLIST HEADER: The AE should place an "X" in the appropriate Submittal Checklist section (Submitted, Pending, Not Applicable (N/A)) to note the status and inclusion of the content in the submittal. Include the location of the submittal where the information can be found. Comments may be noted if explanations are needed.
10. Type of Deliverable

    Report
    Calculations
    Aggregate (a mix of deliverable types)
    Drawings (BIM and 2D Documentation)

11. The PG 18-15 Checklist for the project must be provided in the latest version of Excel, and also printed and included at the front of the Submittal Deliverable.
12. The Excel file must be saved using the official project name and submittal phase. Example: Jefferson Davis Towers-SD1.xlsx



Appendix B

Cover Page Photo Credits

Main Pedestrian Concourse at Rocky Mountain Regional VA Medical Center - Denver, CO.
Photo courtesy of SOM, Christopher Barrett Photography.

Living Area at VA Sheridan, WY.
Photo courtesy of CLH Architects, Elkhorn, NE.

Lobby at Harbor - UCLA Medical Center - Los Angeles, CA.
Photo courtesy of KMD Architects.

Specialty Care Lobby at Durham VA Medical Center - Durham, NC. Image courtesy of Apogee Consulting Group.

PACT Exam Rooms at VAMC Brockton, MA. Photo courtesy of Department of Veterans Affairs.