The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

Header 2

List View

General Information | Contact | Default Values | Discount | Document Information | Clarification Request

Procurement Folder: 1102081
Procurement Type: Central Purchase Order
Vendor ID: VS0000041475
Legal Name: Perspectus Architecture
Alias/DBA: Perspectus Architecture
Total Bid: $0.00
Response Date: 09/29/2022
Response Time: 12:29
Responded By User ID: Perspectus
First Name: Cheryl
Last Name: Roberts
Email: croberts@perspectus.co
Phone: 2163773685

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Status: Closed
Solicitation Description: A/E SERVICES FOR CHILDREN'S CRISIS CENTER
Total of Header Attachments: 2
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Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Solicitation Response

Proc Folder:	1102081
Solicitation Description:	A/E SERVICES FOR CHILDREN'S CRISIS CENTER
Proc Type:	Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2022-09-29 13:30	SR 0511 ESR09292200000001636	1

VENDOR

VS0000041475
Perspectus Architecture

Solicitation Number: CEOI 0511 BSS2300000001

Total Bid: 0 **Response Date:** 2022-09-29 **Response Time:** 12:29:58

Comments:

FOR INFORMATION CONTACT THE BUYER
Crystal G Hustead
(304) 558-2402
crystal.g.hustead@wv.gov

Vendor
Signature X **FEIN#** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Architectural engineering				0.00

Comm Code	Manufacturer	Specification	Model #
81101508			

Commodity Line Comments:

Extended Description:

Expression of Interest Children's Crisis Center

PERSPECTUS

WEST VIRGINIA DEPARTMENT OF HEALTH AND HUMAN RESOURCES

EXPRESSION OF INTEREST FOR A/E SERVICES - CHILDREN'S CRISIS CENTER

SOLIICITATION #: CEOI BSS2300000001

SEPTEMBER 29, 2022

PERSPECTUS

September 29, 2022

Crystal Hustead, Senior Buyer
State of West Virginia
Department of Administration, Purchasing Division
2019 Washington Street, E.,
Charleston, WV 25305

Solicitation #: CEOI BSS2300000001 / Expression of Interest for A/E Services – Children's Crisis Center

Crystal:

Perspectus is a leading architectural design firm with significant experience working with premier healthcare, behavioral health, civic, and cultural institutions. We are excited to present our qualifications and team for this critical Children's Crisis Center project. Our leadership, staff, and team's significant experience working on healthcare and behavioral health projects will bring great value to West Virginia Department of Health and Human Resources and the project stakeholders.

Perspectus has additional special interest in this project because of our Founding Principal Bill Ayars, FAIA, FACHA. Bill founded the Emerald Jenny Foundation (EJF) in memory of his daughter Jennifer Emerald Ayars. The foundation established a resource to support people struggling with substance abuse disorders locate available treatment options. EJF became the official resource site at the time for the Ohio Department of Mental Health and Addiction Services, with over 1,200 participating treatment centers. EJF has served more than 200,000 families, filling a critical gap until a nation-wide federal website was created. For this work, Bill was honored with the 2020 AIA Ohio Public Service Award.

Due to the complexity of this project, we are bringing a high-caliber and well-respected team to the table. Understanding the needs of children in crisis is paramount to the success of the project. BHFC Design, our behavioral health consultant, will be critically involved in designing a safe, humane, and therapeutic campus which recognizes the needs of children, parents, staff, law enforcement, clinicians and others interacting with the facility. Karpinski Engineering, our MEP engineering partner, and Barber & Hoffman, our structural engineering firm, each long-time collaborators, will assist us with facility engineering approaches.

We understand the serious and sensitive nature of children in crisis. We embrace the challenge to design a new approach for respectful healing, allowing children to be children. Our respect for this societal issue related to behavioral health, woven with our healthcare and behavioral health programming, planning, and design expertise will provide the West Virginia Department of Health and Human Resources and project stakeholders an informed, nuanced, and comprehensive vision.

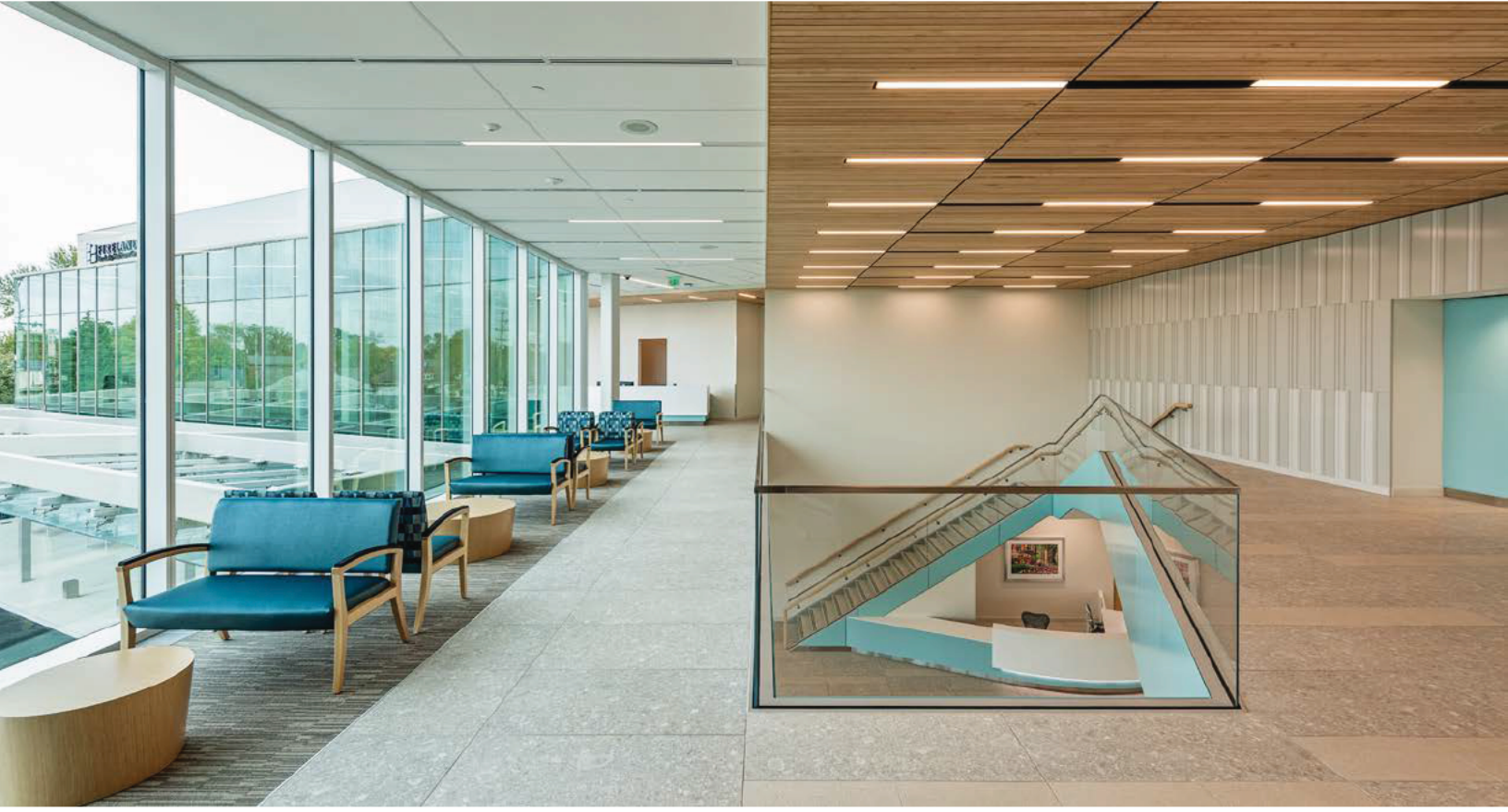
Perspectus desires to be a part of this important project for the citizens of Elkins, West Virginia. We are a strong design firm, rooted in trust, and hungry to tackle this project and serve West Virginia DHHR unlike any other. Please address any questions you might have to me at (216) 377-3684 / srini@perspectus.com. The Perspectus team looks forward to the next steps in the selection process.

Sincerely,

Salvatore Rini, AIA, ACHA
Managing Principal

WE DESIGN EXCEPTIONAL EXPERIENCES.

PERSPECTUS is a hybrid of design and service, utilizing creative solutions in pursuit of our clients' greatest ambitions, and providing constant confidence through unrivaled reliability, cooperation and communication from first steps through finishing touches.



CONTENTS

1 FIRM PROFILE

FIRM OVERVIEW

Perspectus is a full-service architecture firm committed to creating exceptional experiences. We design healthcare, campus + cultural, senior living, civic + government, commercial, historic architecture, science + technology, and clubs + hospitality spaces.

ABOUT US

With a dedicated team of designers, we cultivate a culture of world-class talent, creativity, and passion. As an award-winning architecture firm, our team understands how to deliver custom solutions through communication and innovation. The combination of unparalleled skill and customer service delivers enriching, exceptional results for our clients.

OUR VISION

Our reason for being goes beyond buildings. It's about more than architecture. We exist to create a better-designed, more functional world through exceptional spaces that enhance healing, working, learning and living. We exist to achieve our clients' greatest aspirations and improve the lives of those who encounter our designs. Within a framework of cooperation, respect and professionalism, we turn complicated problems into stunning solutions, architect tomorrow's experiences while acting as protectors and rejuvenators of history, and we employ our earned expertise to rise to any challenge set before us.

Firelands Sandusky Healthcare Center - Sandusky, Ohio

DESIGN PHILOSOPHY

Perspectus believes that constraints lead to compelling design solutions, approaching the design process as an opportunity to tackle challenges to maximize value for our clients.

Problem-solving is where design happens. A modern approach to design and construction should be responsive to the project's context and the demands of the program. In other words, no project is a clean slate; the context gives life to the design.

The Perspectus team is adept at blending creative solutions, emerging trends and construction technology into comprehensive solutions that directly respond to project site, program and user needs. Quality architecture utilizes simple, efficient design gestures that produce dynamic and highly functional spaces. These spaces are built with contemporary, durable materials and buoyed by technical competency. The result is a structure that is sustainable, efficient, and infused with timeless character and approachability.

FIRM HISTORY

Perspectus was established in 2001 by Bill Ayars, FAIA, FACHA and Larry Fischer, AIA, ACHA. Their vision: an architectural design firm recognized for service and design excellence. Bill and Larry fostered a culture of growth at Perspectus, building a design legacy that would outlast them through transparency and mutual trust.

SERVICES

Perspectus Architecture's professional team delivers comprehensive design and historical architecture services. We provide clients with the technical support necessary to incorporate emerging trends and technology.

- **Architectural Design**
- **Interior Design**
- **Preservation**
- **Environmental Graphic Design**
- **Site + Feasibility Studies**
- **Programming + Planning**
- **Sustainable Design**

2 PROJECT TEAM

TEAM ORGANIZATION CHART

WEST VIRGINIA Department of Health & Human Resources
BUREAU FOR PUBLIC HEALTH

PERSPECTUS ARCHITECTURE | PROJECT MANAGEMENT

bhfc DESIGN

Salvatore Rini
AIA, ACHA
Principal in Charge
MAIN POINT OF CONTACT

Dave Urbansky
AIA, SCUP
Project Manager

Ray Minotas
AIA, LEED AP BD+C
Design Lead

Kimberly McMurray
AIA, EDAC, MBA
Behavioral Health Architect / Anti-Ligature Design Expert

KEY CONSULTANTS

KARPINSKI ENGINEERING
MEP, Security, Data, Telecommunications + Fire Protection Engineering
Matt Morgan, PE
Dave Curfman
Natasa Cekic
Ryan Smith
Gary Jones, PE

BARBER & HOFFMAN, INC.
Structural Engineering
Jon Leuthaeuser, PE, SE
Brad A. Boomer, PE

TBD WITH WV-DHHR
Civil Engineering

COMMUNICATION AND STAFFING PLAN

APPROACH TO COMMUNICATION WITH THE BOARD AND CONTRACTORS

The architects are the first stewards of a building, working with stakeholders to transform an idea into a design. Then we work daily with builders to make a building from our design documents. A successful building will be the result of clear communication, accessibility, transparency, and respect.

Communication protocols will be set up immediately upon award of the project. We will organize an initial meeting which will establish point of contacts, describe how communication needs to be executed, review shared digital resources and archive options, and discuss any other issues important to the WV DHHR.

The same type of meeting will be established after construction contracts are awarded. We will meet with WV DHHR and the builders to discuss communication protocols and as well as cloud-based construction management platforms.

PROJECT TEAM ASSIGNMENTS

From the outset, **Sal Rini will be the Principal-in-Charge** for the entire project. He will direct and manage the design team and engage with the WV DHHR executive committee leadership to ensure momentum in maintain, deadlines are achieved, and expectations met. He will also engage with leadership from the eventual builder and sub-contractors to ensure implementation of the design and to solve any issues during construction. Sal will be the main point of contact

Dave Urbansky will be the day-to-day project manager, to assist Sal in managing and leading the project.

Dave will be pushing the project along every day, engaging with the internal Perspectus team as well as our engineering consultants. As the project moves into construction, Dave will manage the construction administration process, interacting with the builders daily.

Clear communication will also benefit from a design and construction schedule. Upon award of the project, we will work with WV DHHR to establish a design schedule. This schedule will outline all major design meetings, as well as interim progress + preview calls prior to major design meetings. We will seek to create agendas for meeting, outlining which stakeholders need to be present, which materials which will be present, and desired outcomes of each meeting. By thoroughly scheduling the entire design process, which may take up to twelve months, meetings can be added to stakeholder schedules well in advance to maximize participation, and therefore maintain decision-making momentum.

Salvatore Rini, AIA, ACHA

PRINCIPAL IN CHARGE / MAIN POINT OF CONTACT

PERSPECTUS

As a Managing Principal of Perspectus, Sal Rini is a seasoned architect with more than 30 years of experience in the planning, programming and design of healthcare facilities, having led some of the firm's largest and most notable healthcare projects.

His experience entails involvement in all phases of design including master planning, programming and project management. Sal is especially adept at communicating with clients to bring a clear consensus on highly specialized and complex projects. His attention to detail and ability to timely respond to all critical project demands and stakeholder concerns, ensures all projects will deliver a leading-edge design focused on patient care.

EDUCATION

Bachelor of Science in Architecture, Kent State University

REGISTRATION

Registered Architect in Ohio

The American Institute of Architects (AIA)

American College of Healthcare Architects (ACHA)

RELEVANT EXPERIENCE

Lorain County
Lorain, Ohio
Crisis Receiving Center

Cuyahoga County
Cleveland, Ohio
Diversion Center

Summa Health System
Akron, Ohio
New Behavioral Health Pavilion**
Dr. Gary B. and Pamela S. Williams Patient Tower**
Stow-Kent Medical Center

Salvation Army
Cleveland, Ohio
Zelma George Family Shelter Addition

Firelands Regional Health
Sandusky, Ohio
Sandusky Healthcare Center

LECOM Health
Erie, Pennsylvania
Millcreek ED and ICU Addition

MetroHealth System
Cleveland, Ohio
Main Campus Apex Project*
Ambulatory Enabling Projects*
Brecksville Health and Surgery Center*
Ambulatory Facility Utilization Surveys
Beachwood Health Center
Old Brooklyn Campus Post-Acute Rehab Services
West 150th Health and Surgery Center Renovation
Ronald McDonald House Renovation
Critical Care Pavilion Emergency Department Renovation
Surgical Intensive Care Unit Renovations*
Cardiac Intensive Care Unit Renovation*
Brain Injury Rehabilitation Unit Renovation*
Medical Specialities Clinic Planning*
Heart & Vascular Clinic Planning*

University Hospitals
Cleveland, Ohio
Angie Fowler Adolescent & Young Adult Cancer Treatment Center

* Perspectus in collaboration with CBLH Design

** Perspectus in collaboration with Hasenstab Architects

Dave Urbansky, AIA, SCUP

PROJECT MANAGER

PERSPECTUS

Dave's career as an architect spans more than 20 years and has focused on providing technical design development, construction document and administrative leadership for all types of construction. Dave has gained extensive knowledge in all project stages from master planning, programming and design through construction administration. Working with healthcare, senior living, hospitality, higher educational and governmental clients, he is experienced in project management and understands client expectations and program requirements.

His highly collaborative, team-oriented work style helps clients translate their vision into reality. Dave efficiently and successfully manages all project phases while working closely with consultants and clients to ensure that every project detail is properly incorporated.

EDUCATION

Bachelor of Arts in Architecture
University of North Carolina

Master's of Architecture
University of Oklahoma

REGISTRATION

Registered Architect in Ohio

The American Institute of Architects (AIA)

Society for College and University Planning (SCUP)

RELEVANT EXPERIENCE

Lorain County
Lorain, Ohio
Crisis Receiving Center

LECOM Health
Erie, Pennsylvania
Millcreek ED and ICU Addition

Summa Health System
Akron, Ohio
Behavioral Health New Building and Program Consolidation**
Anesthesia and Critical Care Administration
New Wound Care Building
Neuroscience Renovation
MRI Addition
2 North Interventional Suite
7 West INpatient Floor Renovation
Fishcreek Medical Office Building
Akron City Hospital Renovations - Phase I

University Hospitals
Cleveland, Ohio
Geauga Medical Center Master Plan

Surgical Hospital at Southwoods
Boardman, Ohio
Ongoing Master Planning + Design

U.S. Customs & Border Protection
Harpers Ferry, West Virginia
Campus Master Planning
Global Borders College Advanced Training Center (Certified LEED Gold)
New Student Dormitories/ Conference Center (Targeting LEED Gold)
Tactical Training Center Renovation

Belmont College
St. Clairsville, Ohio
Campus Master Planning
Health Sciences Center
Main Building Improvements, Phases 1 &2
Main Campus HVAC Upgrades

** Perspectus in collaboration with Hasenstab Architects

Ray Minotas, AIA, LEED AP BD+C

DESIGN LEAD

PERSPECTUS

Ray is a Senior Project Director whose talent and ambition have contributed to the firm's growth and reputation as a leading healthcare design firm. Using his keen problem solving skills, Ray delivers inventive and cutting-edge design solutions that improve and advance healthcare delivery. He has extensive experience providing architectural design and project management for a variety of project types.

Most recently, Ray has served as Architect and Project Manager for Summa Health System's New Behavioral Health Building and Behavioral Health Program Consolidation, as well as their New West Patient Tower and the Cleveland Salvation Army's Zelma George Family Shelter Addition.

EDUCATION

Master of Architecture, New School of Architecture and Design

Bachelor of Science of Technology, Architecture / Environmental Design Bowling Green State University

REGISTRATION

Registered Architect in Ohio

The American Institute of Architects (AIA)

LEED Accredited Professional BD+C (Building Design and Construction Specialty)

RELEVANT EXPERIENCE

Lorain County
Lorain, Ohio
Crisis Receiving Center

Cuyahoga County
Cleveland, Ohio
Diversion Center

Summa Health System
Akron, Ohio
Behavioral Health New Building and Program Consolidation**
Dr. Gary B. and Pamela S. Williams Patient Tower**
Stow-Kent Medical Center
Akron City Campus Master Plan
Hamlin Hybrid Operating Room Suite
New Outpatient Blood Lab & Radiology Department
Geriatric Inpatient Floor
Center of Excellence Ambulatory Renovations

Salvation Army
Cleveland, Ohio
Zelma George Family Shelter Addition

LECOM Health
Erie, Pennsylvania
Millcreek ED and ICU Addition

Firelands Regional Health
Sandusky, Ohio
Sandusky Healthcare Center

MetroHealth System
Cleveland, Ohio
Main Campus Apex Project*
Ambulatory Enabling Projects*
Brecksville Health and Surgery Center*
Critical Care Pavilion ED Renovation
Broadway Health Center
New CT Installation and Related Improvements
Old Brooklyn Health Center Post-Acute Rehab Services Department Renovation
West 150th Health & Surgery Center Renovations
West 150th Breast Center Department Renovation
Ronald McDonald Family Room

* Perspectus in collaboration with CBLH Design

** Perspectus in collaboration with Hasenstab Architects

Kimberly McMurray, AIA, EDAC, MBA

BEHAVIORAL HEALTH ARCHITECT

bhfc DESIGN

McMurray, offering an expertise in behavioral health design, is a practicing healthcare planner and architect with over 37 years of leadership experience in healthcare on academic, non-profit, and private medical campus architecture. McMurray has a decade of experience from the owner's perspective and collaborating with multi-disciplinary user groups, thereby embracing a unique perspective and response to client needs; applying her knowledge of clinical operations, evidence-based design, lean operational planning; to lead projects from programming, concept development through design. McMurray is Principal of Behavioral Health Facility Consulting, LLC a 100% Woman Owned Enterprise.

EDUCATION

Master of Business Administration, University of Alabama at Birmingham

Bachelor of Architecture, Arizona State University

REGISTRATION

Registered Architect in Alabama and Georgia

National Council Architectural Registration Boards

Evidence Based Design Certification, Center for Health Design

RELEVANT EXPERIENCE

Lorain County Crisis Receiving Center Lorain, Ohio
Programming and design consulting services with Perspectus for a new mental health, addiction and assessment center in Lorain, Ohio.

Cuyahoga County Diversion Center Cleveland, Ohio
Programming and design consulting services with Perspectus to develop a new behavioral health diversion center services for the community of Cuyahoga County.

Alabama Department of Mental Health, Crisis Stabilization and Treatment Centers Huntsville, Montgomery and Mobil, Alabama
Consulting services in collaboration with Benchmark and each respective architect-of-record for the development of three Crisis Treatment Centers. The centers will include a triage/ evaluation unit, short term observation (10 positions) and extended stay (15-bed) unit, administrative and support services.

Banner University Hospital, Phoenix, Arizona
Consulting services with HKS architects for Inpatient General Psychiatric Unit, located at ninth floor of the New Hospital Tower (22 beds).

Brookdale Hospital Medical Center Brooklyn, New York
Consulting services with Array Architects, Manhattan, NY, renovation, and relocation Inpatient General Behavioral Health Units (58 beds).

Bryn Mawr Hospital, Main Line Hospitals Philadelphia, Pennsylvania
Consulting services with CRTKL Associates, Dallas, TX, renovation, and relocation Inpatient General Behavioral Health Units (40 beds).

Cannon Memorial Hospital Linville, North Carolina
Consulting services with McMillan Pazdan Smith Architecture, Charlotte, NC, renovations for Behavioral Health Admission/Discharge Unit and Inpatient General Adult Behavioral Health Unit (27 beds).

Casa de Amparo Teen Wellness Center San Marcos, California
Consulting services with Tucker Sadler Architects, San Diego, CA, new building cottage for adolescent girl's residential treatment facility (16 beds).

Cherokee Indian Hospital Authority Cherokee, North Carolina
Consulting services with McMillan Pazdan Smith Architecture, Charlotte, NC, Behavioral Health Outpatient Clinic, Inpatient General and Crisis Stabilization Unit, New Building Addition (17 beds).

Colorado Mental Health Institute Pueblo Denver, Colorado
Hawkins Building #12, L-2 Unit – Consulting services with Davis Partnership Architects, new building addition for forensic patients (22 beds).

Franciscan Health Behavioral Health Michigan City, Indiana
Consulting service with Shive-Hattery for renovation to convert an existing medical unit into a new behavioral health unit, admissions, and therapy program spaces for adult and sub-acute patients (14-beds).

Grove Point Behavioral Health Greenville, South Carolina
Programming, CON and design consulting services with Prisma Health System and Cannon Design for (65 beds) replacement inpatient adolescent, adult and geriatric patients, outpatient clinics and School of Medicine University of South Carolina faculty offices.

Larimer County Behavioral Health Crisis Stabilization and Treatment Center
Consulting services with Page Southerland Page (architect of record) during the establishment of the project vision, space programming and peer review during design and construction. Project includes triage/evaluation center (8 rms), three units (16-beds) and observation (16-stations), therapy, administration, and support services.

Mercy Michigan Health System Oakland, Livonia, Chelsea, Ann Arbor, Muskegon, and Grand Rapids, Michigan
Consulting during design and construction phase with respective architect and Kasco Contractor for several Behavioral Health renovation inpatient projects within the Michigan Health System.

Mt. Sinai Hospital Miami, Florida
Consulting Services with Hospital and Stantec Architecture – Renovation for Inpatient General Behavioral Health Adult Unit (30 beds).

Oklahoma State University Medical Center, Oklahoma Department of Mental Health and The Anne & Henry Zarrow Foundation Tulsa, Oklahoma
Programming and Design consulting services with Dewberry for New Psychiatric Hospital on OSU Medical Center Campus for (106 beds) adult inpatient beds, crisis stabilization center with observation unit and extended short stay unit.

Prisma Adolescent Residential Treatment Facility Greer, South Carolina
Programming, CON and Design Consulting Services with Prisma Health System and Cannon Design for (22 beds) replacement residential adolescent treatment facility and Charter school facilities.

Sarasota Memorial Hospital Behavioral Health Pavilion Sarasota, Florida
Programming and Design Consulting services with Gresham Smith Partners for (82 beds) replacement inpatient adult, geriatric and child/adolescent patients, outpatient clinic, PHP/IOP, ECT/TMS procedure suite and Crisis Evaluation Unit.

The University of Alabama and Alabama Department of Mental Health
Tuscaloosa, Alabama
Architect for Taylor Hardin Secure Mental Facility (THSMF) new forensic twenty-five bed nursing unit, THSMF facility renovation for technology and data upgrades, and THSMF security control room renovation. (Work with previous firm Ward Scott Architecture)
Architect for Ligature Resistant Upgrades including door hardware and toilet room upgrades in response to recent surveys by The Joint Commission for Harper Center Geriatric Facility. (Work with previous firm Ward Scott Architecture)
Programming and Behavioral Health Consultant with TRO Brannen Jung for new forensic campus addition at Taylor Hardin Secure Medical Facility for ninety-six new beds, renovation for three existing inpatient male forensic units, admissions unit, patient therapy, administrative offices, and support services.

University of California Los Angeles (UCLA) Los Angeles, California
Programming and Conceptual Planning for the relocation of the Westwood Behavioral Health services to new standalone Mid-Wilshire Campus for BH emergency services, neuromodulation clinic, IOP/PHP services, inpatient for child, adolescent, adult, and geriatric patients. BHFC, working directly with UCLA Medical Center in collaboration with HGA design team (100+ bed target).

University of North Carolina Chapel Hill, North Carolina
Consulting Services with MHAworks, Durham, NC, Transitional Care Unit for Behavioral Health, and Emergency Services (40 beds).

University of New Mexico Medical Center + Bernalillo County Crisis Treatment Center
Albuquerque, NM
CTC and PES service collaboration between the Bernalillo County and UNMH offering community crisis stabilization services, psychiatric emergency services, including ten extended stay beds, with direct connectivity to University Psychiatric center campus. Behavioral Health Consulting services from programming through construction with McClain + Yu and Davis Partnership.

University of New Mexico Medical Center Albuquerque, NM
Programming and Schematic Design and Cost Estimating Phase Consulting Services with Dekker Perich Sabatini - Renovation Adult Inpatient Behavioral Health Services (32 beds).

University of Maryland, Upper Chesapeake Medical Center Aberdeen, MD
Renovation for Behavioral Health Inpatient General and Geriatric Behavioral Health, Partial Hospitalization and Outpatient Clinics (42 beds).

U.S. Corps of Engineers, Hospital and Clinic Replacement Fort Leonard Wood, MO
CON and RFP Consulting Services with Leo A. Daly Company for Inpatient and Outpatient Behavioral Health Services and Standards for RFP to Design Build Team.

Washington State and Department of Veterans Administration, VA Home Facility
Seattle, Washington
Consulting with Sage Architectural Alliance for Pre-Design Services to develop program and conceptual studies to renovate a historic building on the Veterans Administration campus for a future VA Residential Treatment Services.

bhfc DESIGN
BEHAVIORAL HEALTH FACILITY CONSULTING

16266 Marcum Road, Tuscaloosa, Alabama 35406
317 Edgewater Drive, Pensacola, Florida 32507
P.O. Box 2396, Tuscaloosa, Alabama 35403
PHONE: 205.454.2210
EMAIL: kimberly@bhfcllc.com
WEBSITE: www.bhfcllc.com

100% WOMEN OWNED ENTERPRISE

COMPANY PROFILE

Behavioral Health Facility Consulting, LLC was founded in November of 2007 with the primary objective of assisting psychiatric hospitals, behavioral health facilities and other organizations providing treatment for the mentally ill with developing safe, restorative and healing therapeutic environments for their patients and clients. Careful consideration is given to staff safety and providing a workplace where they will feel safe and will result in assisting with recruitment and retention of high-quality personnel. Additionally, the organization is committed to increasing the awareness of facilities and designers regarding the current design trends and latest products that have been developed which are safer to use in these environments.

St. Mary's Hospital
Grand Rapids, MI

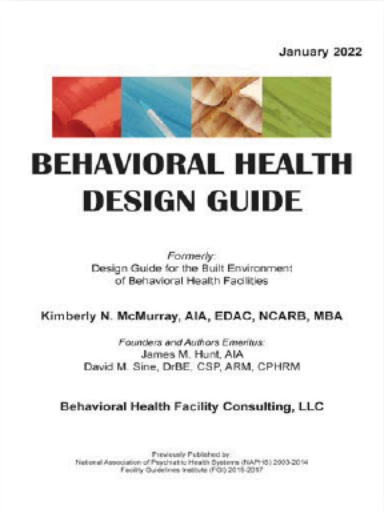
West Springs Hospital
Grand Junction, CO

Kingsbrook Jewish Medical Center, Brooklyn, NY

BHFC Design has participated in the planning, design, and construction of +40 behavioral health care facilities in twenty states plus three projects in British Columbia, Canada. These projects have a combined total of over 2,000 patient beds and a total construction cost of over $700 million. In addition to these construction projects, +60 facilities in twenty-five states have been visited and Patient and Staff Safety Reviews conducted to identify potential hazards in existing units and helping with resolving these issues through cost effective solutions that both increase safety and reduce the institutional appearance of the patients' environment.

BHFC's founder and Consultant Emeritus, James M. Hunt, practiced architecture over 40 years, including 30 years of working with behavioral health care facilities. Twenty of those years (1981-2001) were as the Director of Facilities Management for the Menninger Clinic, a world renowned private mental health organization. This provided him the unique opportunity to understand the day-to-day operation and management of these facilities. It also allows him to assure that communication between the organization's clinical, facility and administrative staff and the design team is fully understood and helps provide a finished project that is an accurate reflection of the facility's requirements. Jim continues to participate with writing and publishing of the Behavioral Health Design Guide as an Emeritus Co-Author.

BHFC's unique experiences have provided the opportunity to see things applied and executed well and many things poorly applied and executed. BHFC will not bring a one-size-fits-all solution to this project. Numerous items and conditions will be identified as issues to be explored. Then several solutions will be presented to each situation along with the strengths and weaknesses of each solution so the Client can make informed decisions. Every project is unique, and the completed facility will reflect the specific requirements and features necessary for the patient populations served and the organization's needs.



The company objective to increase the awareness of facilities and designers regarding the current design trends and latest products had been addressed by publishing white papers in peer reviewed journals, authoring articles in trade magazines, speaking at international, national, and state behavioral health care conferences. Mr. Hunt and Ms. McMurray are co-authors of the *"Behavioral Health Design Guide"* that has been continuously published on-line from 2003 to 2019, the latest in June 2019. It is now available free of charge at www.bhfcllc.com. In addition, numerous manufacturers seek their advice on how to improve products for this market. No compensation is ever accepted for these consultations, any products listed in the Design Guide or recommended to clients.

Hunt was invited to participate in an Expert Panel assembled by The Joint Commission and CMS to address ligature attachment risk issues that have been significant issues throughout 2017 and this emphasis and participation will continue an as needed basis. McMurray and Hunt participated with the Facility Guidelines Institute Behavioral Health Topic Group to review the 2022 Guidelines for Behavioral Health.

BHFC remains committed to improving the built environment for mentally ill patients and the staff that assist them as well as striving to expand the knowledge of how to design buildings and develop products that will enhance the experience for all who encounter these facilities. BHFC is always ready to help you discover the answers that are best for you, your patients, and your organization.

KARPINSKI ENGINEERING
Firm Profile

I have worked on projects across the U.S., and Karpinski has the best engineers I have ever met.

Aparna Bapu
Owner's Representative
Aparna Bapu Consulting

TOP 100

MEP Firm: *Consulting-Specifying Engineer* and *Building Design + Construction*

5 LOCATIONS

Cleveland, Columbus, Pittsburgh, Akron-Canton, and Jamestown NY

1983

Year Founded

Karpinski Engineering is an award-winning, multidisciplinary engineering firm. We partner with clients to design environments that make a positive impact on people and communities.

Karpinski is known for mechanical, electrical, and plumbing engineering, but we are so much more than MEP. Clients turn to Karpinski for technology design, specialty fire protection engineering, and civil engineering, as well as energy, sustainability, and commissioning services. We apply our diverse experience to develop effective solutions to our clients' toughest engineering challenges.

With our sustainable design experience, we help clients improve their environmental impact and optimize their energy use. We have contributed to 90+ LEED Certified projects, 3 WELL projects (in progress), and 40+ geothermal projects. Our team includes Certified Energy Managers and LEED Accredited Professionals, and a Certified Geoexchange Designer. Karpinski staff participate in ASHRAE national technical committees on building energy performance, district utility systems, and healthcare.

Collaboration is part of our culture, influencing how we work with one another and how we deliver projects. We have specialized expertise in team based project delivery, including integrated project delivery (IPD), Lean, design assist, and design build. Team members have presented at national and regional events including the Lean Construction Institute Congress and the COAA Owners Leadership Conference.

When it comes to design tools, we are experts in Revit and Building Information Modeling (BIM). We use them to create powerful visuals, show design intent, and smooth the transition from design to construction. Today, our MEPT design team produces all projects in Revit, and we are continually developing new ways to streamline processes and optimize workflow.

MATT MORGAN, PE, LEED AP BD+C
Mechanical Associate

ABOUT MATT

Matt Morgan has a straightforward style that is focused on getting things done for his clients. Matt designs mechanical systems and manages projects. He specializes in healthcare engineering, with a portfolio that includes new hospitals, renovations in active healthcare facilities, and reference laboratories. Matt balances the technical and human aspects of engineering, developing designs that will work for the people who use them. He enjoys finding solutions to project challenges and seeing them through.

PROJECT ROLE

- Principal-in-Charge

CREDENTIALS

- Bachelor of Science, Mechanical Engineering, The Pennsylvania State University
- Ohio Professional Engineer #[redacted]

HIGHLIGHTS

- ASHRAE Member
- Past President, ASHRAE Cleveland Chapter
- ASHE Member
- Northern Ohio Society for Healthcare Engineering (NOSHE) Member

RELATED PROJECTS

FAIRVIEW HOSPITAL BEHAVIORAL HEALTH RENOVATIONS
Cleveland Clinic | Cleveland, Ohio
Patient Rooms | Activities Area | Dining Room | Nurse Station

MARYMOUNT HOSPITAL BEHAVIORAL HEALTH RENOVATIONS
Cleveland Clinic | Garfield Heights, Ohio
Behavioral Health and Emergency Department | 4 Floors of Renovation

EUCLID HOSPITAL BEHAVIORAL HEALTH UPGRADES
Cleveland Clinic | Euclid, Ohio
2nd Floor Renovation | Dining Room, Group Room, Art Space, Time Out Room, and Multi Sensory Room

LAKEWOOD FAMILY HEALTH CENTER
Cleveland Clinic | Lakewood, Ohio
New Construction | 62,000 SF | $24 M | Collaborative Project Delivery

TRIPOINT MEDICAL CENTER
Lake Health | Concord Township, Ohio
Replacement Hospital | 300,000 SF | $150 M | Includes OB/GYN Department, Ultrasound, C Section Surgery, LDRP Department, and Nursery

DAVE CURFMAN
Senior Mechanical Project Designer

ABOUT DAVE

Dave Curfman provides mechanical engineering design for healthcare and large scale commercial projects, focusing on HVAC and medical gas systems.

Dave cares about creating spaces that work. He values engineering design that advances the architect's vision and serves the functional needs of a space. He believes in cultivating new ideas to find better solutions to design challenges.

PROJECT ROLE

- Lead Mechanical Engineer

CREDENTIALS

- Bachelor of Science in Operations and Supply Chain Management, The University of Akron

HIGHLIGHTS

- ASHRAE Member

RELATED PROJECTS

HEARTLAND BEHAVIORAL HEALTH RENOVATIONS
Heartland Behavioral Health | Massillon, Ohio
Safety Improvements for about 80 Resident Rooms

BEHAVIORAL HEALTH RENOVATIONS
Akron General Hospital | Akron, Ohio
6th Floor Renovation | Treatment Beds, Nurse Station, and Unit Support Spaces

BEHAVIORAL HEALTH CENTER
MetroHealth | Cleveland Heights, Ohio
$42 M Expansion | 110 New Treatment Beds | Psychiatric Urgent Care | Mental Illness and Addiction Treatment

BEHAVIORAL HEALTH ICU NORTH WING
Parkview Health System | Fort Wayne, Indiana
Renovations and Safety Improvements for about 30 Resident Rooms | Multipurpose Room | Nurse Station with Break Room and Group Room

NORTH CANTON HEALTH CENTER
Akron Children's Hospital | North Canton, Ohio
New Outpatient Facility | $8.4 M | 36,500 SF

NATASA CEKIC
Electrical Associate

ABOUT NATASA

Natasa Cekic appreciates that her work in healthcare engineering affects the wellbeing of patients, especially as they journey to recovery.

As an electrical engineer, Natasa designs lighting, power distribution, and fire alarm systems for renovations and new construction. Her passion for customer service drives her to pursue solutions that are both innovative and attentive to practicality and maintenance.

PROJECT ROLE

- Lead Electrical Engineer

CREDENTIALS

- Bachelor of Science, Electrical Engineering, The University of Akron

HIGHLIGHTS

- Award of Merit | Lighting at North Royalton Branch of Cuyahoga County Public Library | 2014 IES Illumination Awards

RELATED PROJECTS

MARYMOUNT HOSPITAL BEHAVIORAL HEALTH RENOVATIONS
Cleveland Clinic | Garfield Heights, Ohio
Behavioral Health and Emergency Department | 4 Floors of Renovation

FAIRVIEW HOSPITAL BEHAVIORAL HEALTH RENOVATIONS
Cleveland Clinic | Cleveland, Ohio
Patient Rooms | Activities Area | Dining Room | Nurse Station

EUCLID HOSPITAL BEHAVIORAL HEALTH UPGRADES
Cleveland Clinic | Euclid, Ohio
2nd Floor Renovation | Dining Room, Group Room, Art Space, Time Out Room, and Multi Sensory Room

BEHAVIORAL HEALTH RENOVATIONS
Akron General Hospital | Akron, Ohio
6th Floor Renovation | Treatment Beds, Nurse Station, and Unit Support Spaces

LAKEWOOD FAMILY HEALTH CENTER
Cleveland Clinic | Lakewood, Ohio
New Construction | 62,000 SF | $24 M | Collaborative Project Delivery

RYAN SMITH, RCDD
Associate, Director of Technology

ABOUT RYAN

Ryan Smith appreciates the creative challenges of technology design whether it's finding efficient ways to lay out cabling, determining alternative pathways when infrastructure is being relocated, or choosing the right system for a project out of myriad options.

As a technology engineer, Ryan provides management and design for a range of projects, focusing on healthcare and education.

PROJECT ROLE

- Lead Technology Engineer

CREDENTIALS

- Bachelor of Engineering, Cleveland State University
- BICSI-Registered Communication Distribution Designer (RCDD)

HIGHLIGHTS

- Member, BICSI (Building Industry Consulting Services International)

RELATED PROJECTS

HEARTLAND BEHAVIORAL HEALTH RENOVATIONS
Heartland Behavioral Health | Massillon, Ohio
Safety Improvements for about 80 Resident Rooms

BEHAVIORAL HEALTH RENOVATIONS
Akron General Hospital | Akron, Ohio
6th Floor Renovation | Treatment Beds, Nurse Station, and Unit Support Spaces

FAIRVIEW HOSPITAL BEHAVIORAL HEALTH RENOVATIONS
Cleveland Clinic | Cleveland, Ohio
Patient Rooms | Activities Area | Dining Room | Nurse Station

EUCLID HOSPITAL BEHAVIORAL HEALTH UPGRADES
Cleveland Clinic | Euclid, Ohio
2nd Floor Renovation | Dining Room, Group Room, Art Space, Time Out Room, and Multi Sensory Room

LAKEWOOD FAMILY HEALTH CENTER
Cleveland Clinic | Lakewood, Ohio
New Construction | 62,000 SF | $24 M | Collaborative Project Delivery

GARY JONES, PE
Director of Fire Protection

ABOUT GARY

For Gary Jones, a career fire protection engineer, the ability to make buildings safer is a point of pride. He understands the impact of fires and fire damage the catastrophic losses and the interruption to education or business that they can cause. As an engineer, Gary advocates having fire protection systems based on the building and functions within. While codes provide a minimum level for fire protection, an owner can opt for more comprehensive fire protection to protect people and property.

PROJECT ROLE

- Lead Fire Protection Engineer

CREDENTIALS

- Bachelor of Science, Fire Protection Engineering, University of Maryland
- Ohio Professional Engineer #[redacted]
- Pennsylvania Professional Engineer #[redacted]
- Maryland Professional Engineer #[redacted]

HIGHLIGHTS

- President, Northeast Ohio Chapter of the Society of Fire Protection Engineers (NEO SFPE)

RELATED PROJECTS

CAMPUS TRANSFORMATION PROJECT
MetroHealth System | Cleveland, Ohio
Replacement Hospital | Design Assist | 11 Floor Hospital Tower

AKRON GENERAL EMERGENCY DEPARTMENT
Cleveland Clinic | Akron, Ohio
Fire Alarm Speaker Decibel Level Verification

ST. JOHN MEDICAL CENTER FIRE ALARM UPGRADES
University Hospitals | Westlake, Ohio
Approx. 300,000 SF | Voice Fire Alarm with Partial/Zoned Evacuation and Code Required Detection/CO Detection System

MAIN CAMPUS F&G BUILDING
Cleveland Clinic | Cleveland, Ohio
Smoke Control Technical Support

THE ROSEANN PARK FAMILY TOWER
Cleveland Clinic | Avon, Ohio
212,000 SF | $106 M | Construction Administration Review

TAUSSIG CANCER CENTER
Cleveland Clinic | Cleveland, Ohio
New Replacement Building | 377,000 SF | $276 M | Construction Administration

BEHAVIORAL HEALTH CENTER
Cleveland Clinic, Marymount Hospital

PROJECT STATS

< 13,000 SF
< $3.8 M
< 27 beds
< Year complete 2011

SERVICES

< Mechanical
< Electrical
< Plumbing
< Technology

Marymount Hospital's Behavioral Health Center was opened to meet the unique needs of older adults. This inpatient program features 27 beds in private/semi private suites and is dedicated to taking care of older adults who have special psychological needs. Karpinski Engineering provided MEPT services for the project, which converted two wings of the hospital's sixth floor.

Mechanical scope included the installation of two new air handling units to eliminate in room fan coil units. Patient rooms have reheat coils for individual temperature control, and all patient room air distribution devices and temperature sensors are secure/tamper resistant. Toilet exhaust systems were upgraded to meet updated code requirements, and all plumbing fixtures in patient areas are also secure/tamper resistant. Medical gas outlets are located within a lockable enclosure.

BEHAVIORAL HEALTH ICU NORTH WING
Parkview Health System

PROJECT STATS

- 6,000 SF
- 12 Patient Room Bathrooms
- Year complete 2018

SERVICES

- Mechanical
- Electrical
- Plumbing
- Technology
- Fire Protection

Parkview Health System renovated portions of its Behavioral Health ICU Wing, making upgrades for patient safety and staff functionality.

The team remodeled 12 patient room bathrooms, reconfigured the nurse station, enlarged common areas, replaced patient room doors, and made finish improvements. An important component of the project was using bathroom fixtures and other equipment suited to a behavioral health setting.

The mechanical and plumbing scope included new patient bathroom fixtures, reworking the existing sprinkler layout, and providing new grilles and diffusers for corridors, common areas, and nurse areas. Electrically, the scope included new power receptacles, new lighting and controls, tele/data end devices, security devices and wiring to existing head end equipment, and an extension to the existing fire alarm system.

BEHAVIORAL HEALTH ICU WEST WING
Parkview Health System

PROJECT STATS

- < 2,800 SF
- < 6 Private Patient Rooms
- < Year complete 2020

SERVICES

- < Mechanical
- < Electrical
- < Plumbing
- < Technology
- < Fire Protection

Parkview Health System renovated a portion of its facility to create a behavioral health ICU wing. The West Wing features six private patient rooms, a nurse station with break room and group room, and a multipurpose room with an attached restroom.

Each patient room has a private bathroom furnished with fixtures suited to a behavioral health setting. The unit has new lighting and controls, sprinkler coverage throughout, and new HVAC grilles and diffusers.

The team upgraded the HVAC infrastructure to serve the renovation. A new air handler with energy recovery, as well as replacement heat pumps tied into the existing water source heat pump system, provide space conditioning. Electrically, the project incorporates new power receptacles, new fire alarm devices and wiring, and nurse call and security devices and wiring.

FIRM OVERVIEW

FOUNDED
1934

HISTORY

Barber & Hoffman, Inc. (B&H) is a premier **structural engineering** consulting firm serving the Midwest and Mid-Atlantic states. We have been providing structural engineering expertise since its founding by C. Merrill Barber in 1934 in Cleveland, Ohio. The firm opened offices in the Pittsburgh area in 1998 and in Columbus, Ohio in 2009. During Mr. Barber's distinguished career as a design professional, together with his partners and successors, many impressive landmarks in the public and private sectors have been created.

B&H is prepared to serve as the prime professional, working directly with building owners, or to serve as a consultant to architects or contractors. Our firm is rich with a versatile staff of registered Professional Engineers, EI's, and technicians. We possess decades of experience coupled with the knowledge of the latest design techniques, structural engineering modeling, materials technology, and cost-effective planning to produce a wide range of interesting and efficient buildings and structures.

A Principal manages each project bringing together knowledge, coordination, and integration of specialized skills needed for completion. The daily interplay among the staff encourages creative and effective design solutions. We utilize integrated computer modeling with associated tools for analysis and design. We are proficient in utilizing AutoCAD and Building Information Modeling (BIM) for design and drafting.

B&H has the legal status of a professional corporation and a certified small business enterprise (Federal, City of Cleveland, Cuyahoga County, City of Columbus & City of Pittsburgh).

RELEVANT EXPERIENCE

BELLEFAIRE JCB	Cleveland, OH
Adolescent Behavioral Health Facility	
UNIVERSITY HOSPITALS	
Rainbow Center for Women & Children New Health Center	Cleveland, OH
Ahuja Medical Center MOB	Beachwood, OH
Broadview Heights Health Center	Broadview Hts., OH
Concord Medical Office Building	Concord, OH
Twinsburg Medical Office Building	Twinsburg, OH
CLEVELAND CLINIC FOUNDATION	
Chestnut Commons Medical Office Building	Elyria, OH
Fairview Hospital ED - ICU Addition	Cleveland, OH
Pathology & Laboratory Medicine Institute	Cleveland, OH
P5 & P6 Buildings Behavioral Health Renovations	Cleveland, OH
Strongsville Radiation Oncology Center Addition	Strongsville, OH
SOUTHWEST GENERAL HEALTH SYSTEM	
Ambulatory Care Center	Strongsville, OH
Brunswick Emergency Department Addition	Brunswick, OH
Brunswick Medical Center New Outpatient Health Center	Brunswick, OH
Ireland Cancer Center Expansion	Cleveland, OH
SUMMA HEALTH SYSTEM	
Akron City Hospital Emergency Department Expansion	Akron, OH
Lake Medina Emergency Department Addition	Medina, OH
THE METROHEALTH SYSTEM	
Brecksville Health Center	Brecksville, OH
Critical Care Pavilion Expansion & Hybrid OR	Cleveland, OH
VA CHALMERS P. WYLIE AMBULATORY CARE CENTER	Columbus, OH
Specialty Care Center Addition	
New Surgery & Chiller Expansion	

PERSONNEL

4 Principals
27 Engineers (15 Registered)
4 LEED AP Personnel
5 Technicians

CAPABILITIES

New Structures
Existing Structures
Parking Garages
Building Assessments
Restoration
Facades
Forensic

MARKET SECTORS

Healthcare
Education
Commercial
Institutional
Housing
Recreation
Parking Garages
Municipal
Civic
Design-Build

STATE REGISTRATIONS

- OH
- DC
- IN
- MD
- MI
- NY
- MS
- WV
- PA
- FL
- IL
- SC
- NJ
- NC
- VA
- TX

The MetroHealth System Critical Care Pavilion
Cleveland, OH

Southwest General Health System Brunswick Medical Center
Brunswick, OH

JON T. LEUTHAEUSER, PE SE

ROLE: Structural Project Manager

Mr. Leuthaeuser is a Principal with the firm. He is experienced in structural design for commercial and institutional as well as housing projects. Mr. Leuthaeuser is proficient in the design of steel, concrete, and wood structures, as well as the analysis of existing structures.

Mr. Leuthaeuser joined the firm in 1996. He has the responsibilities of managing multiple projects and serving as project manager. This includes structural design, supervising other staff members, and interaction with our clients. Mr. Leuthaeuser is also responsible for management of information technology within the firm.

Joined the Firm
1996

BARBER & HOFFMAN, INC.
Consulting Engineers

Education:

Ohio University, 1995
Bachelor of Civil Engineering

Registration: PE 2001

Ohio

Pennsylvania

Florida

Illinois

Texas

Michigan

Professional Affiliations:

Structural Engineers Association of Ohio

American Institute of Steel Construction

Steel Framing Alliance

Cold-Formed Steel Engineers Institute

REPRESENTATIVE EXPERIENCE:

BELLEFAIRE JCB – ADOLESCENT BEHAVIORAL HEALTH FACILITY
CLEVELAND, OH

A new $5.5 M, 13,000 SF, 12-bed inpatient behavioral health unit and maintenance garage on the Wingspan Campus. The brick clad building blends into the campus has a secure observation area with office on the 2nd floor.

ASHTABULA COUNTY MEDICAL CENTER
ASHTABULA, OH

The $75 M 131,000 SF four-story patient care tower addition includes 55 patient rooms, intensive care units, five operating rooms, and an emergency department. The façade consists of a blend of curtain walls and taktl precast panels.

FIRELANDS SANDUSKY HEALTHCARE CENTER
SANDUSKY, OH

A two-level, 42,000 GSF medical office building. The office building consists of offices, exam rooms and shell space for future fit out. The structure is a combination of steel beam and girder framing supported by steel columns.

FISHER-TITUS MEDICAL CENTER – THE SURGERY CENTER OF NORTH CENTRAL OHIO
NORWALK, OH

The $5.8 M 12,000 SF one-story Surgical Center includes 10 Pre/Post OP patient rooms and 3 outpatient operation rooms. The façade is a blend of Metal panel and brick around the perimeter and brick with storefront at the main entrance. The structure includes a large overhang canopy over the drop off area.

THE METROHEALTH SYSTEM – BRECKSVILLE HEALTH & SURGERY CENTER
BRECKSVILLE, OH

In addition to transforming the main campus to meet current and future community medical needs, the MetroHealth vision also included the extension of its modern services beyond its main campus.

THE METROHEALTH SYSTEM – CAMPUS TRANSFORMATION
CLEVELAND, OH

A New $946 Million, 11-floor hospital building and central utility plan reconstructs and renovates the dated MetroHealth main campus. The new hospital building includes new state of the art imaging equipment, laboratory services, hundreds of private patient rooms, large open lobby, community spaces, and support locations.

The MetroHealth System
Brecksville Health & Surgery Center
Brecksville, OH

BRAD A. BOOMER, PE

ROLE: Structural Project Engineer

Mr. Boomer is a Senior Associate for the firm with over 25 years of experience in structural design, analysis, and production of contract documents for a variety of commercial, industrial, and educational projects. His experience also includes investigation and repair of masonry, concrete, and steel-framed buildings, as well as parking garages.

Mr. Boomer joined the firm in 2003. In his years with the firm, he has developed from structural engineer to Senior Associate. He has the responsibilities of managing multiple projects. He will serve as project manager which includes structural design, supervising other staff members, and communication with our clients. In 2020, he became a Senior Associate with the firm.

REPRESENTATIVE EXPERIENCE:

UNIVERSITY HOSPITALS – RAINBOW CENTER FOR WOMEN & CHILDREN HEALTH CENTER
CLEVELAND, OH

A new 40,000 SF, 3-story health center was constructed for approximately $26 M. The new facility is now the home of the Rainbow Ambulatory Practice and MacDonald Women's Health Clinic that once occupied the first floor.

CLEVELAND CLINIC – PATHOLOGY & LABORATORY MEDICINE INSTITUTE
CLEVELAND, OH

A new steel and glass, 4-story, 135,000 SF structure supported on caisson foundations. The building will primarily be used for state-of-the-art laboratories and for office spaces.

UNIVERSITY HOSPITALS - BROADVIEW HEIGHTS HEALTH CENTER
BROADVIEW HEIGHTS, OH

The new 2-story, 52,000 SF outpatient health center facility structure utilized lightweight composite floor construction on steel framing bearing on shallow spread footings. Steel moment frames were designed to resist lateral loads applied to the structure from wind and seismic events.

UNIVERSITY HOSPITALS – CONCORD MEDICAL OFFICE BUILDING
CONCORD, OH

A new 3-story, 61,000 GSF ambulatory medical center includes an urgent care center, surgery center, as well as a laboratory for advanced diagnostics, radiology, and cardiac testing. The facility's structure utilized lightweight composite floor construction on steel framing bearing on shallow spread footings.

CLEVELAND CLINIC – STRONGSVILLE RADIATION ONCOLOGY CENTER
STRONGSVILLE, OH

The $2.1 M expansion, added a 9,100 GSF of finished space to the existing facility. Approximately 7,000 SF was space added through the build-out of the existing unfinished basement and the remaining 2,100 SF was from the building expansion.

UNIVERSITY HOSPITALS – TWINSBURG MEDICAL OFFICE BUILDING
TWINSBURG, OH

A new 2-story, 46,000 SF outpatient health center including a 3-story elliptical tower. The facility's structure utilized lightweight composite floor construction on steel framing bearing on shallow spread footings.

Joined the Firm 2003

BARBER & HOFFMAN, INC.
Consulting Engineers

Education:

Cleveland State University, 1995
Bachelor of Civil Engineering

Registration: P.E. 2000

Ohio

Professional Affiliations:

Structural Engineers Association of Ohio -
SEAoO Secretary: 2012 - 2013
SEAoO Director: 2009 - 2012

American Institute of Steel Construction

University Hospitals Rainbow Center for Women & Children
Cleveland, OH

Cleveland Clinic Pathology & Laboratory Medicine Institute
Cleveland, OH

3 PROJECT EXPERIENCE

Lorain County

CRISIS RECEIVING CENTER - MENTAL HEALTH, ADDICTION & RECOVERY SERVICES BOARD OF LORAIN COUNTY

LOCATION
Lorain, Ohio

SIZE
30,000 SF

COMPLETION DATE
2024 (est.)

COST
$16M

CLIENT CONTACT
Michael K. Doud
Executive Director
Mental Health, Addiciton and Recovery
Services Board of Lorain County
1173 North Road East, Suite 101
Lorain, Ohio 44055
(440) 787-2078
mdoud@mharsic.org

The Lorain County Crisis Receiving Center is a Mental Health receiving and assessment center with a first floor 16-bay Observation unit. The Second floor is dedicated to a Substance Use Disorder Unit with 16 Resident rooms and support services. Sharing a site with the existing Nord Center, the building accommodates access from multiple perspectives and offers compassionate care that seeks to destigmatize accessing mental health and addiction services.

The new building is configured to be an approachable and welcoming environment by visitors. A glass facade denotes entry and allows views into and out of the main reception lobby, projecting the transparent and accepting environment. A second entry accommodates emergency personnel and law enforcement, facilitating an efficient “warm hand-off” to staff with quick access to assessment areas.

The facility promotes well-being by orienting Observation and Resident rooms towards views. Social spaces accommodate various modes of interaction. The Observation bays and Resident rooms have access to dedicated outdoor spaces. Staff interaction areas are distributed within patient areas rather than within their own enclosed space.

The facility establishes a responsive care environment with goals of fostering engagement, diagnosis, treatment, and recovery.

Architect of Record
Perspectus

MEP Engineering
Karpinski Engineering

Structural Engineering
Barber & Hoffman, Inc.

Civil Engineering
KS Associates

Behavioral Health Programming and Design
Behavioral Health Facility Consulting, LLC

Level 1 Floor Plan

Summa Health System

BEHAVIORAL HEALTH PAVILION

LOCATION
Akron Oh o

SIZE
160 000 SF

COMPLETION DATE
est 2022

COST
$80 M

CLIENT CONTACT
Ed Fr ed
V ce Pres dent Construct on
330) 375 7876
fr ed e@summahea th org

The new Behav ora ea th Fac ty w be ocated on the s te of the former Schoo of Nurs ng bu d ng on Summa s ma n campus n Akron Oh o

Summa s Behav ora ea th program s current y ocated on the St Thomas campus and th s pro ect s a key component n the effort to vacate that fac ty

The strateg c c n ca component of the pro ect s to ntegrate Summa s Behav ora serv ces nto the Akron C ty osp ta campus and fac tate better pat ent care between the behav ora and med ca aspects of the overa pat ent exper ence

The new fac ty w house Outpat ent serv ces on the Ground and Second floors w th the Th rd F oor constructed as she ed space for future Outpat ent serv ces or potent a y a Res dent a Treatment fac ty

The Ground floor w nc ude a sma conferenc ng space for commun ty and hosp ta use as we as a h stor ca d sp ay space commemorat ng the h stor ca s gn ficance of the St Thomas fac ty and S ster gnat a n the treatment of substance abuse

A Reflect on Center w a so be ocated on the Ground F oor and s ocated ad acent to an outdoor Resp te Garden

The top four floors w house npat ent Psych atr c Un ts Each un t w house 16 pr vate pat ent rooms w th on un t d n ng and nter or/ exter or soc a spaces

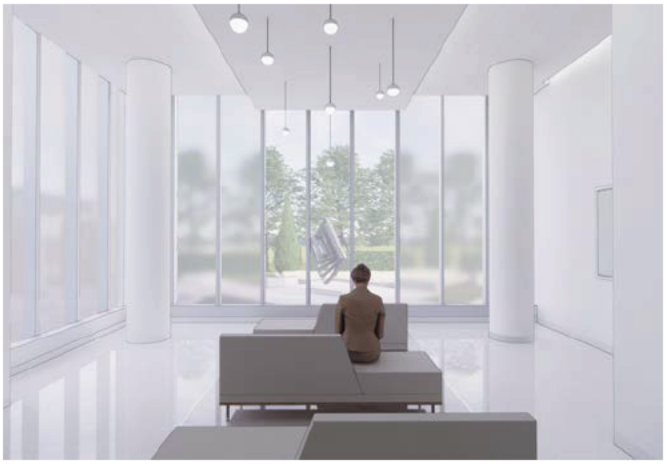
Architect
Perspectus n Co aborat on w th Hasenstab Arch tects

MEP Engineering
BWK Eng neer ng

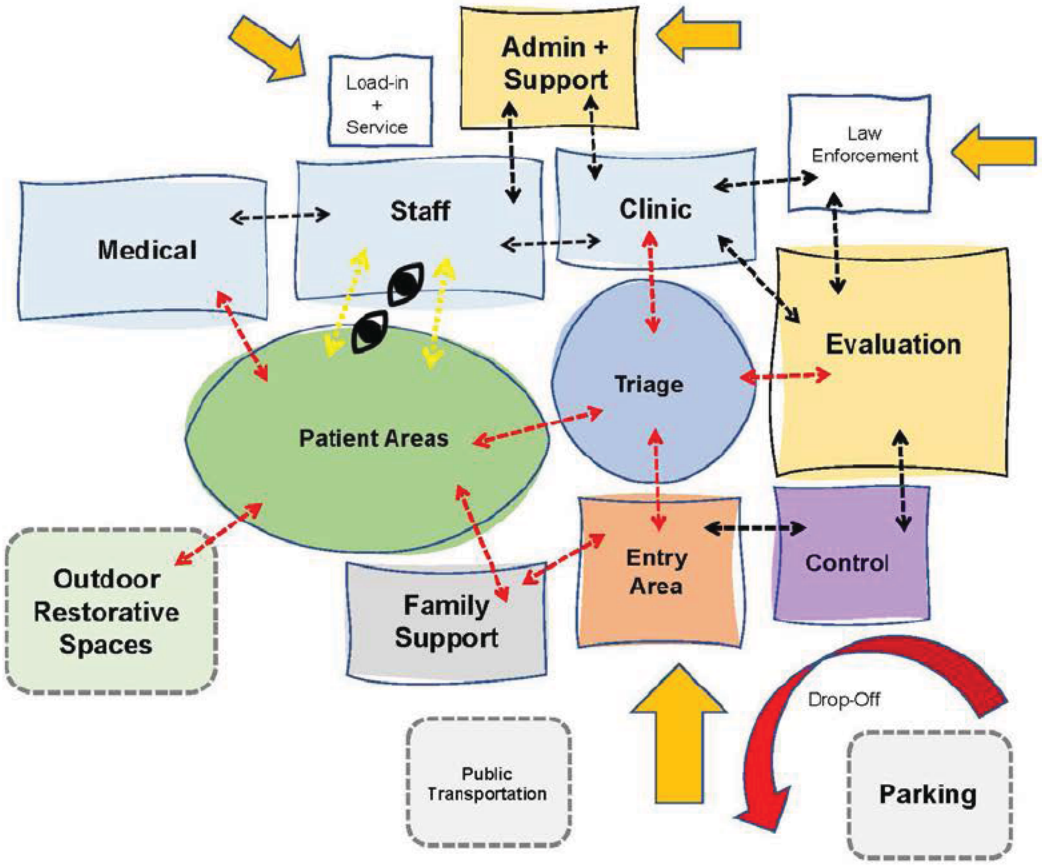
Structural Engineering
Thorson Baker + Assoc

Landscape
Env ronmenta Des gn Group


Summa
Health
Reception




CHECK-IN
INPATIENT
CHECK-IN
SOUTH PARKING
DECK BRIDGE



Cuyahoga County

DIVERSION CENTER

LOCATION
Cleveland, Ohio

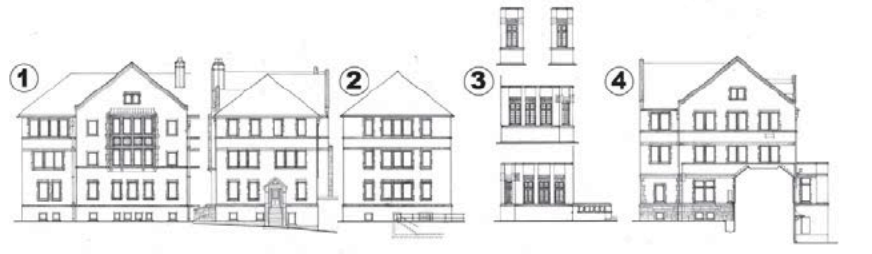
SIZE
TBD

COMPLETION DATE
2023 (est.)

COST
TBD

CLIENT CONTACT
Brandy Carney
Chief of Special Operations
Department of Public Safety
(216) 443-5691
bcarney@cuyahogacounty.us

A Diversion Center is a critical civic and public health need that was identified by Cuyahoga County leadership, law enforcement, and community stakeholders in 2020. In February of 2021 the County engaged Perspectus to complete initial assessment and evaluation studies for multiple sites in the County, including greenfield sites and existing historic buildings. Site assessment and evaluations considered various factors, including footprint, blocking and stacking of program, and site planning in relation to parking needs and overall access and accessibility, as well as contextual compatibility and appropriateness. Perspectus was then asked to provide professional design services for the design of a brand new facility.



1 PARTIAL NORTH EL. 2 PARTIAL EAST EL. 3 PARTIAL COURT BLDG. EL. 4 WEST EL. OF ACTIVITY BLDG.

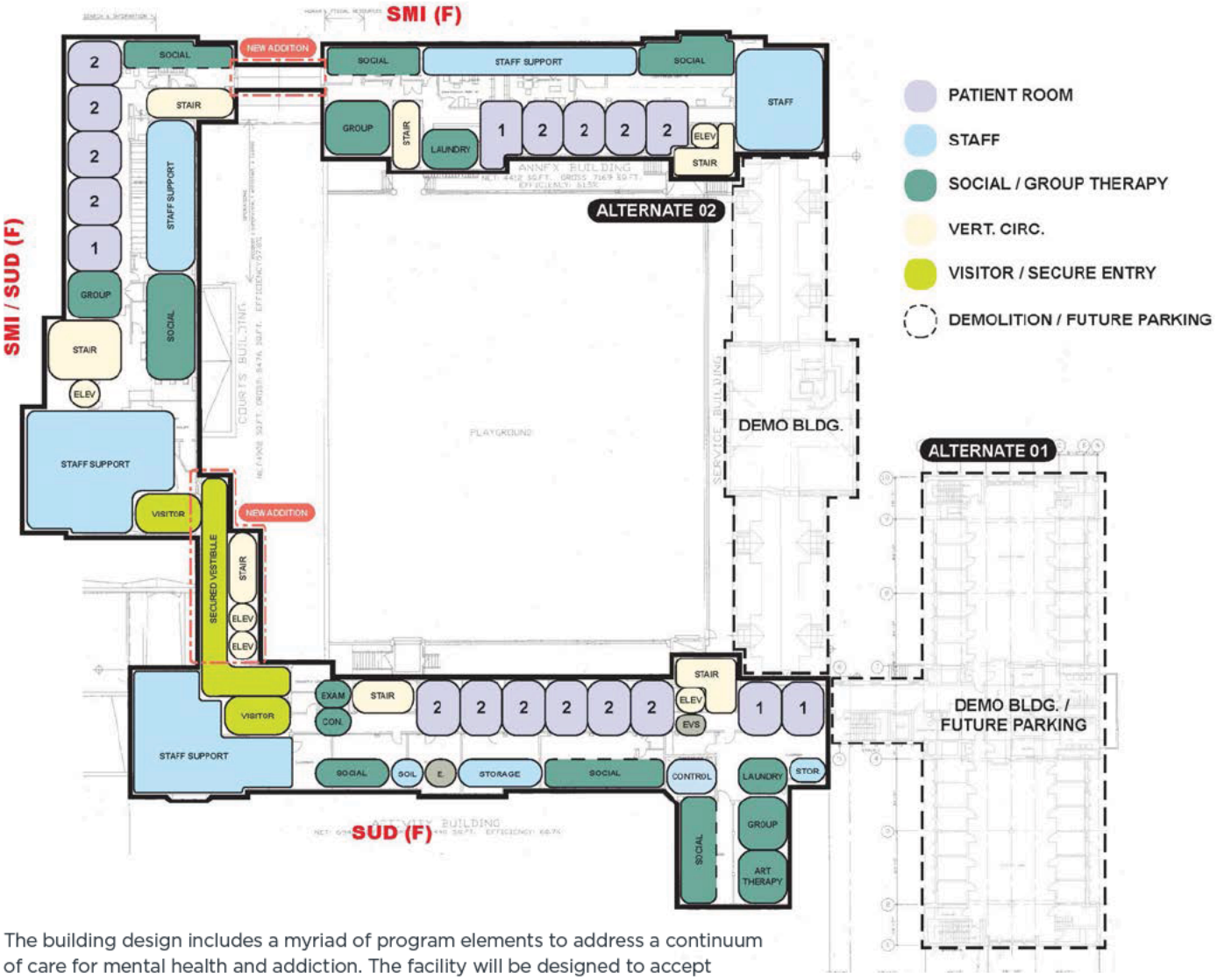
Architect of Record
Perspectus

MEP Engineering
Karpinski Engineering

Structural Engineering
Barber & Hoffman, Inc.

Civil Engineering
Resource International

Behavioral Health Programming and Design
Behavioral Health Facility Consulting, LLC



The building design includes a myriad of program elements to address a continuum of care for mental health and addiction. The facility will be designed to accept patients who would otherwise be taken unnecessarily to detention facilities. The design will involve the creation of restorative spaces for patients, durable, functional, and flexible operations spaces for staff, comfortable environments for families of patients, and safe and secure zones for law enforcement.

Part One of the design services includes programming to define space needs and providing assistance with the site selection process for the new facility.

Part Two of the design services includes planning, design and construction administration. A significant amount of time and effort will involve community engagement and restorative justice conversations about the programming, planning, and overall aesthetic of the facility.

The design for the center strives to address social risk factors, like housing, food insecurity, and access to adequate transit for people in crisis beyond the medical or clinical issues.

SCOPE OF SERVICES

- Site Assessment + Evaluation
- Programming
- Planning
- Architectural Design
- Interior Design
- Specifications
- Management
- Construction Administration

University Hospitals

CHILD & ADOLESCENT BEHAVIORAL HEALTH UNIT RENOVATION

LOCATION
Cleveland, Ohio

SIZE
21,000 SF

COMPLETION DATE
2023 (est.)

COST
TBD

CLIENT CONTACT
Jacob Wattenbarger
Director of Pre-Construction
(216) 372-7503
jacob.wattenbarger@sodexo.com

Perspectus has been retained to renovate 21,000 square feet of space on the third floor of Horvitz Tower to accommodate two separate Child & Adolescent Behavioral Health departments.

The first department is a Child & Adolescent Behavioral Health Unit that will consist of 12 private patient rooms, social activity space and group therapy rooms. The second department is a Child & Adolescent Medical Behavioral Health Unit consisting of 10 private patient rooms set-up for acute care, a large children play/ family waiting room, and multiple nursing stations that provide good visibility to all areas of the department.

Goals for both departments include the following: expanding the bed capacity while providing increased direct observation of the patient sleeping rooms; creating a safe, trusting, and secure environment that promotes healing; allowing for the flexibility and separation of adolescents from young children; and lastly, creating a more patient friendly central nurse work area while maintaining staff safety and security.

The project is currently in the preliminary planning and assessment phase. Through the thoughtful arrangement of spaces, and the appropriate use of color and nature-inspired artwork, the team is striving towards dignity-focused design that creates an overall supportive and anxiety-reducing environment. .

Architect of Record
Perspectus

MEP/T+ FP Engineering
IMEG

Third Floor Plan

University Hospitals

ANGIE FOWLER ADOLESCENT & YOUNG ADULTCANCER CENTER

LOCATION
Cleveland, Ohio

SIZE
24,587 SF

COMPLETION DATE
2020

COST
$12.8 M

CLIENT CONTACT
Chad Van Arnam, Project Manager,
University Hospitals & Sodexo USA
216-318-5463; chad.van-arnam@sodexo.com

UH Rainbow Babies & Children's Hospital's inpatient cancer center aims to foster a sense of normalcy for their adolescent and young adult patients. The unit encourages patient movement and provides comfort for families, while also supporting patient care teams and maximizing staff efficiency.

Perspectus considered patient privacy, quiet spaces, and enhanced patient-staff communication in the design. A positive pressure environment expands infection control beyond patient rooms, allowing them to move through public spaces without masks. An interactive media wall invites further exploration of the space, where patients find playrooms featuring interactive technology, artwork, graphics, color, and lighting for various age groups. The family great room, kitchen, and lounge area encourage activities that emulate a customary routine and the feel of home for both patients and families.

Architect of Record & Interior Design
Perspectus

Lighting/Technology
GPI Design

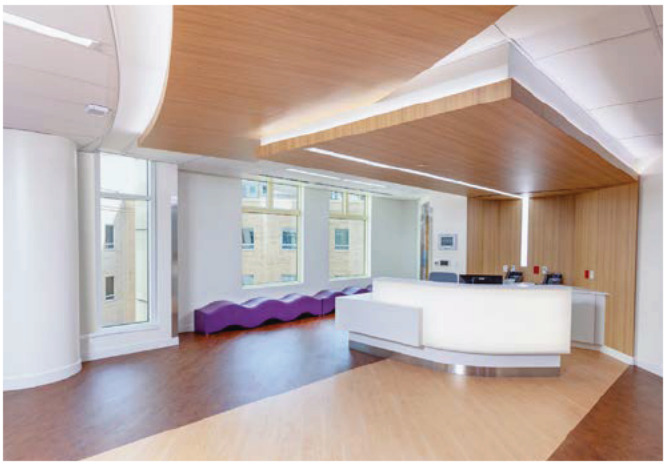
MEP Engineers
Fredrick, Fredrick & Heller Engineers, Inc.

Structural Engineer
Barber & Hoffman, Inc.

Estimating
PCS Builders

I cannot put into words how grateful we all are for you all and all the hard work that everyone has done to have such a great space for these kids and families. I am truly overjoyed with the space and to know such great people were on the journey with us makes it even more special.

Christy Thomas, RN, Assistant Nurse Manager, Inpatient Pediatric Hematology/Oncology



KEY PROJECT FEATURES

- **Neighborhood Layout** Creates Staff Efficiency and a Quiet Environment for patients and staff
- **Patient & Family Spaces** Help to create a Sense of Normalcy and Family Support for the patients
- **Patient Room Design** The room design allows Privacy, Staff Communication, Family Support and infection control
- **HVAC "Protected Environment" System Design** Creates a Healthy Environment for an improved Patient Experience and return to normalcy by allowing and encouraging freedom of movement and improved infection control throughout the unit.
- **Circulation Paths** Interactive Electronics, Color, Artwork and Graphics improve Wayfinding & help to create a Quiet Environment
- **Entry Sequence** Supervision and Infection Control are critical for visitors into the unit.
- **Clinical Support Areas** The location and design of Clinical Staff support areas create Efficiency, Supervision, Transparency and Visual Control with patients and family members.

Summa Health Patient Tower

LOCATION
Akron, Ohio

SIZE
343,000 SF New Construction
64,000 SF Renovation

COMPLETION DATE
2019

COST
$150 M New Construction
$14.7 M Renovation

CLIENT CONTACT
Ed Friedl, VP Construction & Property Management
(330) 375-7876

Perspectus Architecture, in collaboration with Hasenstab Architects, designed the Dr. Gary B. and Pamela S. Williams Tower on Summa Health's Akron Campus. Summa has committed to supporting population health management through team-based care. The collaborative clinical spaces incorporated in this project support the care of patients throughout the facility, improving the patient experience and promoting healthier outcomes.

Designed as the new "front door" to Summa's Akron campus, the 7-story addition's aesthetic stems from two simple curved forms: a concave base, and a convex tower. The base is composed of glass curtainwall and terracotta masonry with a curve that responds to the new site and vehicular traffic. Situated slightly off-center of its base, the tower has a convex curve that provides a dramatic cantilever at the main entry and west elevation. An illuminated metal screen is attached to the western façade providing a beacon that is visible from Route 8.

The tower includes new facilities for Summa's Women's Health program, modern inpatient rooms and nursing units, expanded surgery capacity, and a multi-purpose conference center.

The building has resulted in a comprehensive environment that supports a healthy community, reiterates Summa Health's commitment to the neighborhood, and provides an exciting new perspective for Summa Health and the city of Akron.

- NAIOP Award of Excellence in Architecture
- AIA Akron Design Awards Honor Award; People's Choice Award

Architect
Perspectus in Collaboration With Hasenstab Architects

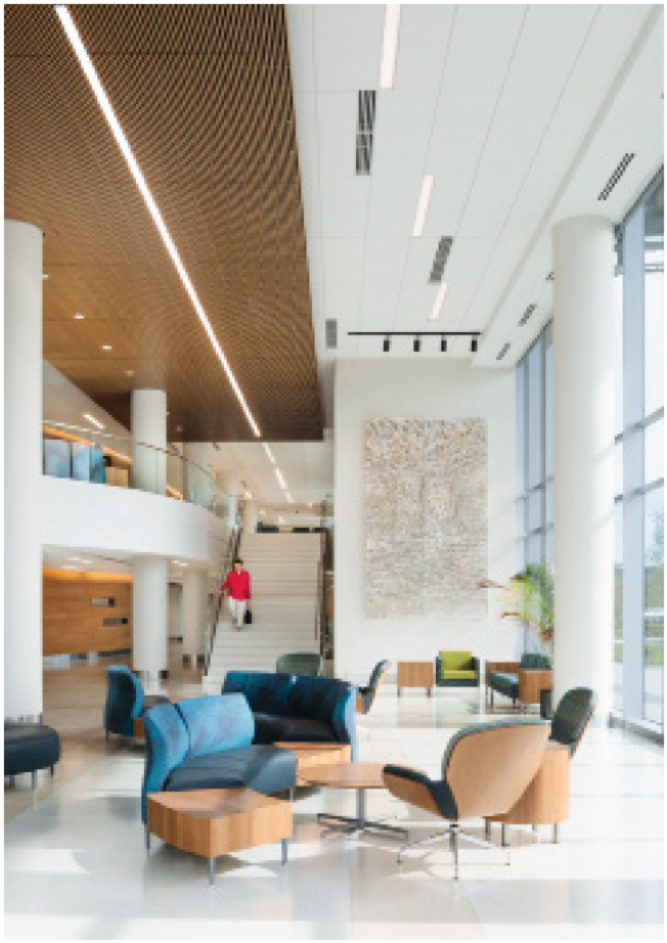
MEPT/ Security / Fire Protection
Bandwen•Williams•Kindbom

Structural
Thorson • Baker + Associates

Civil Engineering
Wohlwend Engineering Group

Landscape Architecture
Environmental Design Group

Construction Manager
Donley's / Shook



PROGRAM ELEMENTS

Ground Floor - Breast Center
Diagnostic and Screening Services
Pre- and Post-Surgical Services
Exam, Mammography, Stereostatic and Ultrasound Rooms
State-of-the-Art MRI

1st Floor - Same Day Surgery Center
8 ORs (2 Fully Robotic)
67 Surgery Prep/Recovery Rooms

2nd Floor - NICU & Birthing Center
22 Bassinets
18 Labor and Delivery Rooms
10 Triage Rooms
3 C-Section ORs

3rd Floor & Basement
Mechanical / Electrical Systems

4th Floor - Postpartum
36 Private Mother and Baby Rooms
Newborn Observation Area

5th & 6th Floors
72 Private Inpatient Surgery Beds

Salvation Army

ZELMA GEORGE FAMILY SHELTER ADDITION

LOCATION
Cleveland, Ohio

SIZE
29,000 sf Addition
9,300 sf Renovation

COMPLETION DATE
2016

COST
$10M

CLIENT CONTACT
Beau Hill,
Executive Director
(216) 619-4676
beau.hill@salvationarmy.org

The existing eight-story, 150,000 square-foot Salvation Army Harbor Light Complex on Prospect Avenue houses services including programs for drug and alcohol rehabilitation, transitional housing, community corrections and electronic monitoring for early release prisoners. A fully occupied family shelter was also housed within the existing building, but the organization was in need of better separation of the family shelter from other client groups.

The new Zelma George Family Shelter Addition is a two-story, 29,000 square foot facility with a one-story connection positioned directly to the south of the existing Complex. The addition includes: controlled reception and intake space; office space; 365 family living units; human trafficking suite; living/family rooms; fully-enclosed courtyard; dining room; classrooms, computer room and multipurpose rooms.

The site was developed to accommodate a new trash enclosure, transformer, emergency generator and 60 parking spaces. The perimeter includes a security fence with access gates off of E. 18th Street and E. 16th Place.

The building's position aligns with the existing Harbor Light structure, continuing the urban street edge down E. 18th Street. The project also included renovations to a portion of the existing 1st floor Harbor Light Complex interior.

Architect of Record
Perspectus Architecture

MEPT / Structural / Civil
Osborn Engineering


THE SALVATION ARMY


THE SALVATION ARMY


THE SALVATION ARMY

LECOM Health

MILLCREEK ED +ICU ADDITION

LOCATION
Erie, Pennsylvania

SIZE
35,000 SF

COMPLETION DATE
2023 (est.)

COST
$19M (est.)

CLIENT CONTACT
Mike Redlawsk
Owners Representative
The Westminster Group
(814) 833-8900
mike@wpperie.com

The project was designed to achieve three main goes for the client 1) expand and upgrade the Emergency Services provided, 2) relocate the existing Critical Care Unit and Medical/Surgical Patient Care Unit, and 3) create a safe, healing environment for behavioral patients.

The new emergency department is sized to accommodate a total of 16 treatment rooms, six of which are dedicated for behavioral health patient care.

Although Emergency Departments do not need to meet the same standards as an inpatient psychiatric facility, thought and consideration was given to the design of all areas where behavioral health patients may access.

The six behavioral health patient rooms are arranged such that a dedicated nursing station can have good visibility into these rooms, ensuring the safety of staff and patients at all times.

All of the required medical gases and headwall devices are concealed behind a drop-down overhead door, which is only opened when staff is inside the room has a need to use the equipment.

The rooms are designed to eliminate any ligature risks and doors into the treatment rooms swing out, which prevents a patient from barricading themselves inside the room.

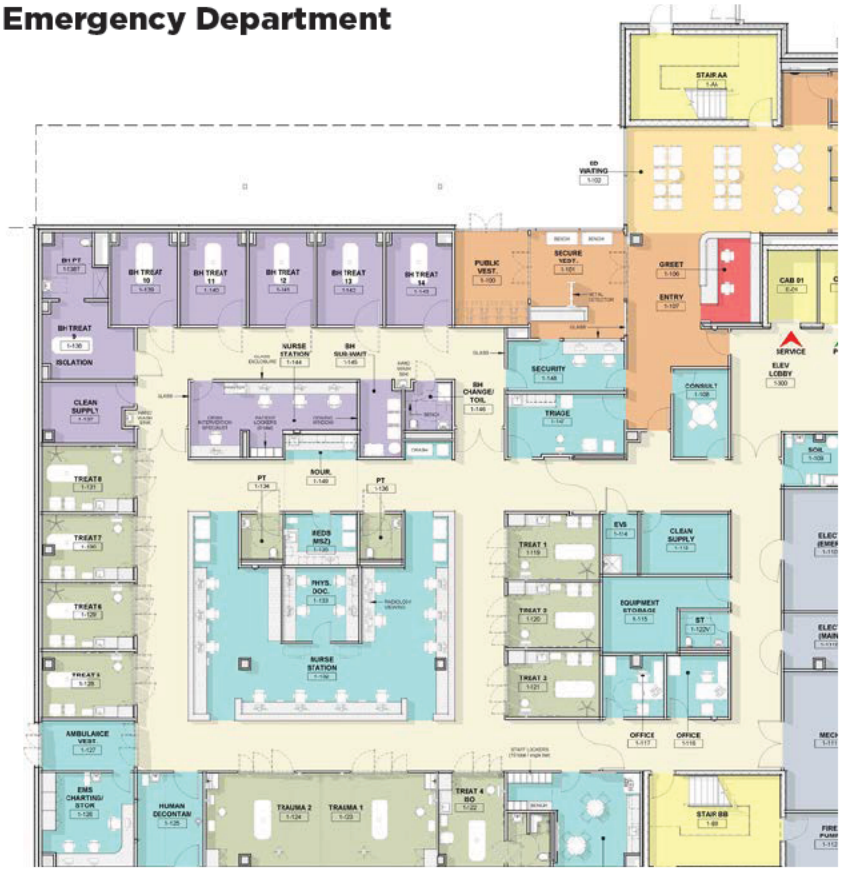
All ceiling lights and diffusers are anti-ligature and tamper proof. Clerestory windows constructed of impact resistant, polycarbonate glazing are provided in each treatment room which helps create a therapeutic and healing environment.

Architect of Record
Perspectus

Structural Engineering
Atlantic Engineering Services

MEP Engineering
CJL Engineering

First Floor - Emergency Department



Second Floor - Med/Surg. Intensive Care Unit

Larimer County Behavioral Health

CRISIS STABILIZATION AND TREATMENT CENTER

Source - Images by Page Southerland Page Architects

LOCATION: Fort Collins, Colorado

SIZE: 55,000 SF

COST: Cost Withheld at Owners Request

OWNER CONTACT:
Scott Stoll, Project Designer
Page Southerland Page, Inc.
370 17th St., Denver, CO 80202
(720) 390-3009
stoll@pagethink.com

START DATE: 2021

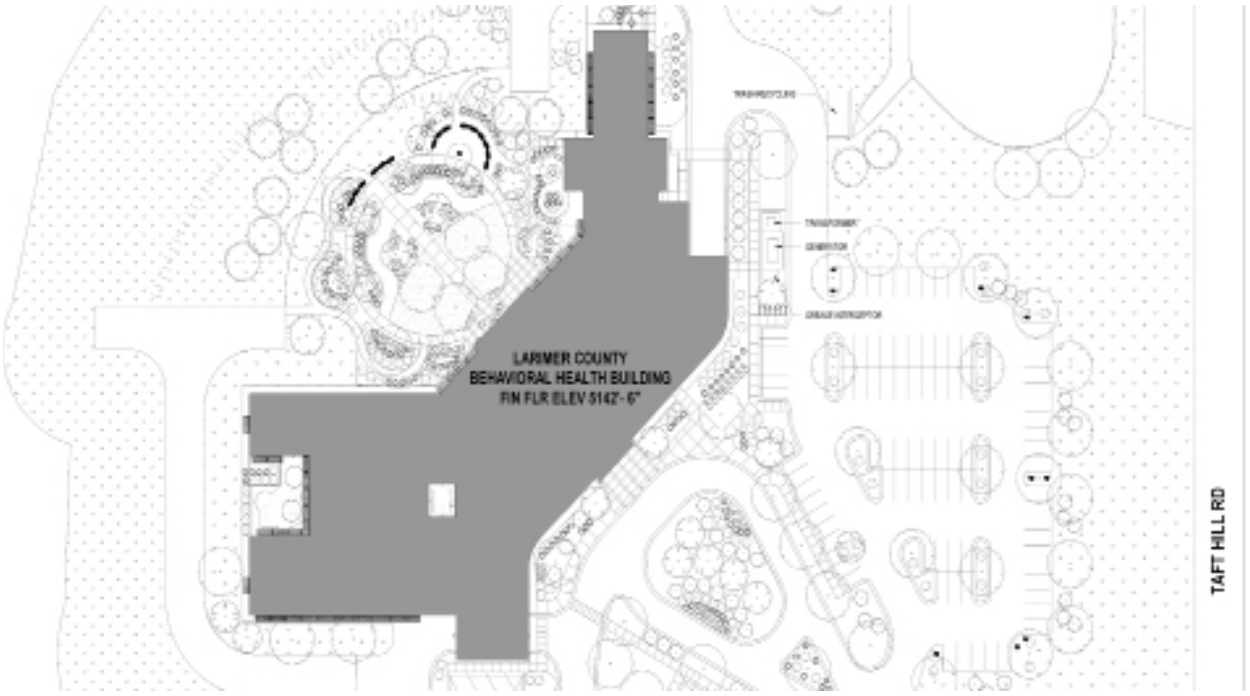
FINISH DATE: 2022

FIRM'S LEAD ARCHITECT:
Kimberly McMurray - PIC

bhfc DESIGN

The new facility will provide a one-stop location for the public, as well as for the public safety-first responders and criminal justice system for referrals and patients in a behavioral and mental health crisis. The behavioral and mental health community services offered at the facility, as we understand include immediate crisis intake, needs assessment, medical clearance for new admits, detox, acute care for compliant and non-compliant patients, medication assisted treatment (MAT), case management and continuity of care, access to community engagement resources and emergency medicine. The building will be a secure locked facility and each patient care component will be a secure unit. The facility will provide acute care for adult individual experiencing a crisis due to menta health or chemical dependence concerns.

Behavioral Health Facility Consulting, LLC partners with Page (Architect of Record) Design Team during the establishment of the project vision, scope and space programming, peer review and product selection during design development construction document and construction administration phases. BHFC will provide assistance with the final observation at the substantial completion stage of the project. The current status of the project is 100% Design Development and Budgeting phase.



1 OVERALL LEVEL OF RISK - LEVEL 1

2 OVERALL LEVEL OF RISK - LEVEL 2

Banner Behavioral Health Hospital

LOCATION: Scottsdale, Arizona

SIZE: 80,000 SF

COST: Cost Withheld at Owners Request

OWNER CONTACT:
Bill Sheeley
Partner - Orcutt Winslow Partnership
(602) 257-1764
sheely.b@owp.com

START DATE: 2016

FINISH DATE: 2017

FIRM'S LEAD ARCHITECT:
Kimberly McMurray - PIC

Banner Behavioral Health Hospital is located on Earl Drive in Scottsdale, Arizona. Banner is deeply committed to excellent patient care providing therapeutic healing by highly skilled and compassionate staff. The project included a two story addition with four behavioral health units of twenty-four beds plus a central dining, recreation and pharmacy. The campus has a total of 156 beds for general adult population offering a full continuum of behavioral and mental heath services.

BHFC provided consulting services from the early programming phase through the Construction phase to assist the Owner and Design Team with addressing the vital patient and staff safety issues inherent in this type of project.

bhfc DESIGN

Cherokee Indian Hospital Authority

BEHAVIORAL HEALTH CRISIS STABILIZATION CENTER

LOCATION: Cherokee, North Carolina

SIZE: 80,000 SF

COST: Cost Withheld at Owners Request

OWNER CONTACT:
R. Cullen Pitts, AIA, LEED AP
Principal, McMillan Pazdan Smith Architecture
(843) 585-5678
cpitts@mcmillanpazdan.com

START DATE: 2019

FINISH DATE: 2020

FIRM'S LEAD ARCHITECT:
Kimberly McMurray - PIC

U wa shv u da nv te lv *(the one who helps you from the heart),*
To hi *(a state of peace and balance),*
Ni hi tsa tse li *(it belongs to you),*
Di qwa tse li I yu s di *(like family to me).*

These are the guiding principles held by the Cherokee Indian Hospital Authority as they work to fulfill the Eastern Band of Cherokee Indians' goal to create a continuum of care for tribe members in need. These guiding principles significantly shape how they give care, and what we held close to our hearts as we helped them design the Cherokee Indian Hospital's new Behavioral Health Unit.

The new hospital will provide behavioral health and rehabilitation departments that serve both adult inpatients and outpatients. The project also included the completion of the new 18-bed Crisis Stabilization Unit (with potential to grow to 28 beds) and the relocation of the Analenisgi Outpatient Clinic and Recovery Center.

bhfc DESIGN

BHFC provided consulting services from the early programming phase through the construction phase to assist the Owner and Design Team (McMillan, Pazdan Smith Architecture) with addressing design and vital patient and staff safety issues inherent in this type of project. At the same time, a great deal of attention was paid to creating an environment that is non-threatening, comfortable and restorative for both patients and staff to support the patients recovery process and the organization's goals.

University of North Carolina

TRANSITIONAL CARE UNIT

LOCATION: Chapel Hill, North Carolina

SIZE: 18,600 SF

COST: Cost Withheld at Owners Request

OWNER CONTACT:
Brian A. Maxwell, RA
President MHAworks
(919) 682-2870
bmaxwell@mhaworks.com

START DATE: 2019

FINISH DATE: 2020

FIRM'S LEAD ARCHITECT:
Kimberly McMurray - PIC

The project scope included a significant expansion to the medical center emergency department providing a separate admissions, crisis evaluation and transitional care unit for behavioral and mental health patients.

BHFC provided consulting services from the early programming phase through the construction phase to assist the Owner and Design Team (MHAworks Architecture) with addressing the vital patient and staff design and safety issues inherent in this type of project.

The design team participated with a 3P process improvement series of working session to establish the project vision, goals and objectives through programming, experience journey mapping exercises to study existing and future patient and staff operational work flows, treatment plans and select key room design elements. A great deal of attention was paid to creating an environment that is non-threatening, comfortable and restorative for both patients and staff to support the patients recovery process and the organization's goals.

bhfc DESIGN

4 PROJECT AND GOALS

PROJECT AND GOALS

DESIGN OF A FACILITY

Suicide is the 2nd leading cause of death among 10-to-18-year old's with 1 in 5 kids affected by mental health issues. The Children's Crisis Center in Elkins, WV will become a critical civic and public health tool to address these growing concerns.

As the needs of our communities have changed and methods of addressing societal concerns have evolved, this building must be programmed, planned, and designed as a safe harbor and restorative facility, while also easing fatigue upon our overburdened justice, social services, and healthcare systems. The architecture must be performative through design, utilizing space, material, natural light, systems, furniture, landscape, and technology as tools for stabilization and rehabilitation.

Beyond performance and function, the Children's Crisis Center should be a proud civic structure, exhibiting the values of the Community and its citizens, and therefore must speak fluently and strongly of our collective civic concern and desires for mental well-being in children. The building needs to provide optimism and clarity, with a welcoming atmosphere for the children it serves, their guardians, and caregivers alike.

Perspectus is a design practice constructed around seasoned architects fluent in award-winning design, technical excellence, and focused client service. For this project the team is comprised of architects and interior designers each with more than two decades of design experience in a variety of building types, including mental health, healthcare, workplace, and government facilities.

As an experienced design studio which works with mission-critical clients, such as healthcare systems and government agencies, we understand the importance on maintaining schedules and timelines to achieve project excellence. As part of every project, we help our clients establish schedules and develop best methods and avenues to achieve those schedules. We will work closely and collaboratively with the West Virginia Department of Health and Human Resources (WV DHHR) to develop schedules for every phase of the project.

We are agile and able to work within compressed, accelerated, and parallel package schedules, coordinating client and design team activities to successfully reach milestones. As supply chain issues and market volatility are still influencing the market, we should anticipate integrating these dynamics into project schedules.

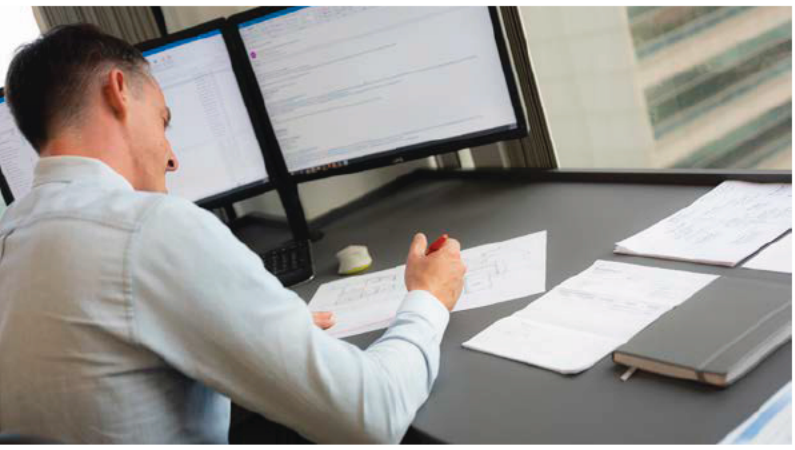
Whether working with CEOs of major health systems, management of federal agencies, physical plant directors of public and private colleges, mayors, or commissioners, we are experienced at leading multi-stakeholder clients and projects. As architects we plan, coordinate, and orchestrate the design process. As leaders of all programming, planning, and design meetings, we develop agendas and materials to create actionable information for deliberate decision-making by leadership. The Elkins, WV Children's Crisis Center design process will entail our team leading and participating in all meetings, as we, the architects, see ourselves as the first stewards of the building.

We will work actively with WV DHHR to establish the schedule and set agendas for each meeting, not only to ensure the desired stakeholder engagements, but also maintain and drive decision-making momentum.

We are a collaborative design practice. While we possess our own perspectives on programming, planning, and design, we desire and respect client input and critique to make our projects better.

Our consultants are also well respective design collaborators, with team members working together on myriads of projects over many decades. We are bringing a first-class design team to this project, the proverbial "A-team." Perspectus is an award-winning and well-respected design practice which has worked with the leading institutions in Northeast Ohio, including all the major healthcare systems, many local governments, campuses, and cultural institutions.

This experience and skill set acquired while working with healthcare and mental health professionals in the public and private spheres, will be required, first and foremost, for a successful and meaningful project.



As an important project for the health and well-being of the City of Elkins and the surrounding area, we understand the need for a broad and comprehensive stakeholder engagement structure. In a time of significant change and concern, voices must be heard.

At the direction of WV DHHR, we will engage with as many community constituents as required, especially in the early stages of the project. We are happy to meet with administration, leadership, departments, municipal entities, municipal groups and representatives, law enforcement and safety forces, public health officials, healthcare entities, social service agencies, families, and neighborhood, affinity, and business groups. In our pre-project coordination sessions, we will assimilate all community engagement activities into the overall project schedule.

PROGRAMMING + PLANNING

Each client is unique. Each building is unique. Therefore, the programming process for each facility is unique. With the assistance of our Behavioral and Mental Health Consultant, we will lead the stakeholders through a programming process that will encourage broad stakeholder engagement while generating specificity to provide a sound programmatic basis for planning and design.

At the outset, we will collaboratively establish project principles and goals which will guide our visioning process. If a "thesis statement" can be created, all design decisions can reinforce the thrust of the project, and project stakeholder can be ambassadors of the project in the community.

Through the programming process, we will discuss how design drivers such as safety, quality & efficiency, technology, adaptability & resiliency, healthy & sustainable and the human experience might shape our project in Elkins, WV.

Programming is critical for the establishment of the needs of the client and the function of the building and its spaces. As part of the programming process, we will establish and document the spatial, functional, and systems needs of each space. For example, certain spaces will be typical, like patient rooms. We will establish the needs of a typical patient room, which can then serve as the template for each patient space in the building. We will also spend considerable time understanding unique spaces, such as potential exam spaces, what the space needs to accommodate, what millwork will be required, but also systems (mechanical, plumbing, electrical data, medical information) and medical devices that will need to be integrated.

Planning will entail distributing the program across the preferred site. We will present various planning options as informed by the project principles, goals, budget, and programmatic needs. During the planning process, we will build consensus on a final and refined planning approach, which will then serve as the foundation for design.

The eventual design of the facility must reflect the aspirations of the community. The character, aesthetic, and performance of the building need to not only accommodate function but also exhibit a charisma of care, stabilization, and rehabilitation.

DESIGN PROCESS

We are successful designers and managers of complicated building types, including “heavy-duty” healthcare facilities, court houses, and federal facilities. Through our work, we understand architecture can be utilized as a tool for rehabilitation and safety, aiding the patients, but also the dedicated staff.

Perspectus is a collaborative design studio, an open design studio. As a design-centered culture, we invite our colleagues to comment on all projects, to quiz and critique design approaches and detailing. Principals, associates, and interns alike are welcomed to engage in the design process. As a unique project, we will present our work on this project to the studio on a regular basis to seek other perspectives and hard-earned wisdom of other studio architects not directly involved with the project. We wish to leverage many decades of design and construction experience of our studio for the betterment of the project and the benefit of your Children’s Crisis Center.

The process will entail and demand regular decisions from decision-makers. From the client side, we recommend that an executive committee be formed for the project. The committee will be the decision-making entity for the project and serve as shepherds and conduits to the departments, agencies, and stakeholder groups they represent. To maintain project momentum, we will collaboratively create an overall project schedule, illustrating major milestones and deliverables. This will be shared with all design and client team members. To ensure delivery of the project, we will manage this schedule to maintain project momentum.

The presentation of clear and actionable information is our duty as the architects of this critical project. We will utilize all available technologies to help the operators and users of the facility visualize the building and its spaces. As a design team, we anticipate mocking-up spaces like typical patient rooms, both digitally and physically, to receive input from the design and client team. By presenting the most accurate design information during the design process, expectations and understood collectively, minimizing surprises.

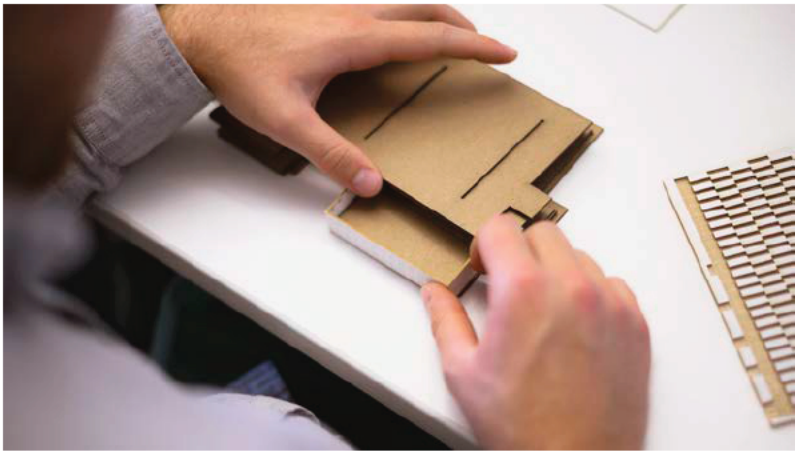
As part of the early process, we will engage and meet with Authorities Having Jurisdiction to understand requirements. If potential code issues emerge during the design process, we will reach out to the AHJs to understand how the authorities interpret a code issue. If we can address any code issues in the design process, time will be saved during the permitting process.

60% of a building's construction budget is architectural. The other 40% is building systems, including mechanical, electrical, technology, audio-visual, security, and other low voltage needs. Thoroughly considered and designed building systems are critical to the success of a facility. Building systems cannot be "applied" to a building — the systems need to be integrated seamlessly into the architecture. Technology drives our daily lives, and therefore needs to be folded into the design of the building and its spaces. Additionally, the building should be designed to accommodate the rapid evolution of technology.

As architects, we need to maintain an engagement with the construction market daily for the benefit of our clients and projects. We have been very successful over many years delivering projects We pride ourselves as not only stewards of the building's design, but also stewards of our clients' budgets. We are guiding a process that we take very seriously.

PHILOSOPHY REGARDING VALUE ENGINEERING AND BUILDABLE DESIGN

Understanding hard construction costs and overall project costs will be critical to shaping and executing the project. Cost control is not a passive activity – it a continual active process through programming, planning, and design.



Controlling cost and creating cost effectiveness will be in the minds our team of architects and engineers throughout the process.

During the design process, we welcome the cost estimator to be part of the design process and will share progress updates with the cost estimating team. They will not be estimating cold from a set of documents.

As a consultant that is deeply aware of market conditions and forecasted trends, our estimator will be encouraged to provide alternative thoughts on systems and constructability, allowing for another perspective on the project. Initial cost estimates will be shared with the client and design team, seeking review and input. After a review and reconciliation process, final estimates will be submitted to WV DHHR as actionable information for decision-making.

It should be noted that as of September 2022, the construction market remains volatile. As the economy re-gains its footing, but also absorbs global and inflationary pressures, while institutions and private entities rapidly re-start projects, and vendors and suppliers more fully re-engage in production, the market is off-center, still seeking equilibrium and normality. Currently, items such as steel bar joists, PVC piping, roofing materials, and paint are in short supply, due to a myriad of factors. Lead times for equipment and materials vary weekly. Based on some recent experience with projects in bidding, competitive hard construction bids are also coming with higher and varying numbers, reflecting that some builders are very busy, while others are still very aggressive in seeking work.

As we proceed through the design process with WV DHHR, we will keep these factors in mind as we select materials, systems, and equipment. Flexibility may be required of all. We are regularly participating in procurement charettes with our client, cost estimators, builders, and sub-contractors to understand and confirm availability of materials, systems, and labor.

For each specification, we may need to provide multiple alternatives for materials, systems, and equipment.

In terms of constructability, we seek to not only create functional and beautiful buildings, but also seek to deliver facilities that are easy to operate and maintain. The building needs to be resilient and durable. As we have worked across many building types, we know it is important to engage with end-users. The design team will spend significant time with caregivers and social services staff to understand the durability and robustness of finishes and protective elements for finishes, as well as hardware and other equipment. We will also want to engage with facilities staff, to understand their comfort level with building systems. We will also discuss ease of access to roofs and size and location of mechanical, electrical, and IT rooms and equipment.

Broadly speaking, there are various strategies to pursue to make a building sustainable, energy efficient, durable, and easy to maintain. Smart design, not necessarily expensive design, can promote efficiency in a cost-effective manner.

Whether or not WV DHHR wishes to pursue any "green" certifications, there are several design opportunities to provide the building overall with efficient attributes. Please note the following design considerations for the programming, planning, and design of this type of facility:

- Create a "light" building footprint on the site, minimizing unnecessary site disturbance
- Minimize paved surfaces, including parking areas, if possible, and consider permeable paving
- Utilize native and drought-resistant vegetation for the site to reduce irrigation needs
- Control storm water flow from the site via swales and other retention areas, or consider harvesting rainwater for irrigation purposes
- Deploy trees & landscape to provide solar protection to the building and to reduce heat island effects
- Orient the building and glazing to minimize solar gain and maximize north light for cooling and lighting efficiency
- Minimize light pollution by orienting and focusing exterior light fixtures downward efficiently
- Utilize efficient low-flow plumbing fixtures and controls (fixtures, toilets, urinals, showers, etc.)
- If the building has a flat roof, utilize white/reflective roofing membranes and materials
- Utilize LED light fixtures, occupancy sensors, and daylight harvesting, promote daylight penetration via internal glass walls & cost-effective skylights
- Maximize daylight to reduce lighting load
- Maximize the performance of the building envelope via insulation, sealants, etc.
- Utilize high-performing glazing and proper thermally-broken storefront/curtain wall systems
- Allow for natural ventilation
- Utilize recycled building materials when appropriate
- Utilize low-emitting finish materials to improve indoor air quality (paint, carpeting, etc.)
- Provide generous airlocks to reduce conditioned air loss
- Consider various mechanical design approaches that reduce energy use and operations
- As a building dedicated to public health, consider utilizing new techniques and approaches developed during the pandemic
- Design the ductwork to prevent leaks, and therefore energy inefficiency
- Since the building may have waiting rooms, exam rooms, and labs, these spaces should be designed to exhaust directly to prevent cross-contamination
- Consideration needs to be given to open-protocol building control systems

In terms ease of use and ease on maintenance, the following needs to be integrated into the design of the building:

- Utilize any building + construction standards as directed by WV DHHR
- Standardize light fixtures, ballasts, and other lighting elements
- Standardize mechanical systems, fixtures, devices, and materials
- Provide adequate and safe access perimeters/area around major mechanical and electrical equipment, including double doors for movement of equipment and parts
- Provide easy and generous access to devices in/on walls or above ceilings via access panels
- At building entrances, provide generous walk-off materials to reduce containments on shoes to enter the building (soil, salt, water, etc.)
- Provide flooring materials that are durable and easy to maintain
- In wet areas, such as restrooms, kitchens, labs, and exam rooms, provide sturdy wall finishes (abuse resistant gypsum board), flooring materials, and millwork that is wear-resistant and easy to clean
- For any roof-mounted equipment, provide walking pads on top of roofing membranes to avoid accidental roof damage
- Provide roof access via stairs that allow maintenance staff to easily navigate the building with tools and materials.

THOUGHTS ON CHILD AND ADOLESCENT BEHAVIORAL HEALTH DESIGN

This is a new and evolving building type. The needs of our communities across the country are helping shape continuum of care models and law enforcement approaches, as well as the buildings that house these services. Kimberly McMurray will collaborate with our team to shape the facility, relying on many years of experience working in behavioral health across the country, but also on her nationally recognized thought leadership in this realm.

Simply said, the Children's Crisis Center, as envisioned by WV DHHR, should be comfortable, attractive, relaxing, and calming in character. The focus on patient, guardian and staff safety has often pushed the aesthetics of these buildings toward the appearance of a detention facility. To better meet the needs of patients and the community, the design must avoid a cold and institutional demeanor while addressing an array of applicable codes and regulations as well as the therapeutic and safety needs of patients and staff. These attributes no longer need to be either-or trade-offs. Both safety and therapeutic environments are possible in a well programmed, planned, and designed facility that possesses a non-institutional appearance that is appropriate for the unique context, sites, conditions, and drivers.

The design of behavioral and mental health facilities varies depending on the targeted age group with unique design considerations for children, adolescents, and young adults.

When designing for this age group, it is imperative to create spaces that are safe and secure for both the child and guardian as well as staff. Though parents are often the problem, that is not always the case so providing spaces that allow for integration into the facility separately as well as alongside a parent or guardian during the intake/ admissions process and then again at the discharge process is important.

Amongst this age group, the separation of child and adolescent is important, designing a facility that provides flexibility and possible use of pod clusters gives the opportunity for separation depending on age.

Sensory and calming is a major issue in crisis for kids and therefore we look to provide therapeutic spaces that calm through the use of light, sound, and the surrounding environment to de-escalate a child in crisis. It's important to provide therapeutic choices for children including sensory walls, sensory playgrounds, seclusion, and outdoor activities.

The use of sensory walls for children in the 6-12 age group provide proprioceptive input to help improve sensory integration. They encourage critical thinking, heavy work and gross motor skills and help to support kids with physical, sensory, communicative, and cognitive disabilities.

Sensory playgrounds within classrooms work well to provide sensory tools and activities to engage kids of all ages. These types of indoor playgrounds are ideal for kids with autism, ADHD and sensory processing disorders, but all kids can benefit from using the active tools to help focus. These playgrounds engage the senses and encourage kids to use their bodies to jump, wiggle, and move, allowing kids to be kids. They encourage tactile exploration and visual stimulation and helps pre-empt disruptive behavior by calming minds and bodies.

For children in extreme crisis, seclusion spaces may be necessary so ensuring that the space provides an entirely safe environment is important and may include padded walls and seclusion safe seating. Providing both indoor and outdoor spaces that allow for pacing, motion/ movement and having the ability to get the energy out and calm down allows the kids to be kids.

THOUGHTS ON SECURITY OVERLAY

While we seek to create a humane architecture and design driven by restorative care, we also recognize that the building and campus need to provide safety for patients and staff, but also ease of use and peace of mind for operators and users. We believe this facility is primarily about behavioral and mental health but understand there will be an overlay of security needs upon the facility and campus.

The security design approach will be informed by the emerging treatment and protocol trends developed by behavioral and mental health specialists, social service professionals, and law enforcement, if desired. Aside from technology and hardware overlays, significant consideration needs to be given to the spatial interface between law enforcement, social services, operators, patients, and families. Elements that will need to be considered include circulation, flow, and processing spaces for in-coming patients. The design of the campus and site will also reflect a humane and therapeutic tone, while still providing the proper security and safety.

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DELIVERY OF AIA DOCUMENTS

Unless directed otherwise by WV DHHR, we will input the project into a BIM model. This model will be shared and utilized by the entire design team. The model will also be utilized for the creation of vignettes and renderings. This will prove a vital tool for the project through all phases of design, construction document creation and construction administration.

We take pride in our construction documents, including our drawings and specifications. Aside from team members listed in our proposal, our studio is supported by architects and technicians who have documented and detailed complicated projects of varying scales and uses. Our team has collaborated with our consultants for several decades on these same projects, creating concise and clear construction documents.

AIA is the industry standard when it comes to document creation and project delivery and develops criteria for programming and schematic design, design development, and construction document phases. Based upon AIA's checklists, we have developed protocols to ensure projects deliver the information required at each phase of a project.

During programming and schematic design, we will conduct meetings and workshops to establish design direction and goals, to tabulate space requirements and develop plans to understand and document space and adjacency requirements. Based upon an approved program, we will develop schematic floor plans and building elevations. A preliminary code analysis will be performed to understand code implications with the building.

MEP system design narratives will be prepared to identify major equipment anticipated for the facility and structural will look towards developing a framing concept for the new facility. AIA matrixes will be used to develop the deliverables for the SD phase of the project.

During Design Development, adjustments may be made to the program components and systems based on the SD cost estimate reconciliation. Building plans, including ceiling plans, interior and exterior elevations and sections will continue to be developed. Development of both MEP systems and structural systems will continue during this phase.

During the Construction Document phase, details, schedules, and notes as part of the complete document package will be developed for all disciplines.

QA / QC PROCESS

Perspectus has developed a comprehensive program to assure that all documents are timely, thorough, and accurate, and provide information suggested by AIA. Formal quality control reviews will be completed on documents in the schematic design, design development and construction document phases. All drawings and specifications will be reviewed for clarity, detailing, sustainability, constructability, and cost effectiveness. Additional review sessions will be conducted to coordinate with consultant team members.

During each phase we will utilize checklists, baseline criteria for comparisons and internal peer reviews to assure thoroughness and accuracy.

PERSPECTUS 62

Cost estimates are regularly developed at each phase; value engineering is a constant item to challenge the design to provide the best value. Our attention to quality and our work ethic can be confirmed by talking to our clients.

PERMIT SERVICES / DOCUMENT DELIVERY

Upon completion of construction documents, we work with the client to file for plan review and permit application with the Authorities Having Jurisdiction. We coordinate review comment responses and work to obtain final approval for necessary licenses and permits for construction.

CONSTRUCTION BID ASSISTANCE

Upon receipt of plan approval from the Authority Having Jurisdiction, or concurrent with that process, we will work with WV DHHR in the bidding process. Typically, we will conduct a pre-bid meeting with interested bidders to review the contract documents and answer any questions the bidders may have initially. We will also assist in responding to any questions bidders have prior to bid submission and issue any addendums required for bidder clarification. We will assist with bid review once bids are received making a recommendation based upon the bids received.

CONST. & SITE PREP OVERSIGHT

Perspectus, will by contract, be on site at determined intervals to take part in Owner-Architect-Contractor meetings, walk the project, answer in-the-field questions, and produce field observation reports any time we are on site. We will answer RFIs, review shop drawings, and process pay applications. We will work with authorities having jurisdiction to ensure the design and building will be safe and code compliant.

TEAMS meetings have become and integral part of our day to day lives and as such, we often participate in TEAMS meetings to review construction on weeks we are not on site.

But Construction Administration is more than the tasks and activities outlined above. From our perspective, Construction Administration is just as important as the design process. Because we wish to see our work constructed properly, we are careful shepherds of the construction process. While we are not building the facility, we are stewards of the owner's needs, desires, and budget. We work to solve problems that arise during construction before they are problems. We will work collaboratively with the contractor, sub-contractors, and vendors to create the facility envisioned by WV DHHR and the design team.

FINAL COMMISSIONING OF COMPLETED FACILITY

Kimberly McMurry, who holds decades of experience planning and designing behavioral and mental health facilities, will assist in the final commissioning of the facility from a behavioral and mental health perspective. Kimberly is an integral part of our team, assisting in workshops and design sessions as well as reviewing and conducting risk assessments during the programming and planning phase. Her knowledge and expertise will carry through the entire process from start to finish with her review of the built facility having a perspective of what risks may exist from construction related activities so that they can be addressed prior to opening the doors of your new facility.

5 LIGATURE-RISK EXPERIENCE

The combined team of Perspectus and BHFC yields an extensive list of experience with ligature-risk environments. One of BHFC's primary service offerings is Patient and Staff Safety Review (PSSR), and BHFC Principal, Kimberly McMurray, literally wrote the book on designing for ligature-risk mitigation.

The *"Behavioral Health Design Guide, Edition 9.0"* (the full document is included in this package as Attachment A) is intended to address the built environment of the general adult inpatient behavioral health care unit.

The design guide accompanies regulatory requirements, to detail practical means of protecting patients and staff. It is intended to represent leading current practices, in the opinion of the authors.

While a safe environment is critical, no environment of care can be totally safe and free of risk. No built environment - no matter how well designed and constructed - can be relied upon as an absolute preventive measure. Staff awareness of their environment, the latent risks of that environment, and the behavioral characteristics and needs of the patients served in that environment are absolute necessities. Different organizations and different patient populations will require greater or lesser tolerance for risk; an environment for one patient population will not be appropriate for another. Each organization should continually visit and revisit their tolerance for risk and changes in the dynamics of the patient population served.

LIGATURE-RISK + PATIENT AND STAFF SAFETY REVIEW (PSSR) EXPERIENCE

* *Indicates Perspectus experience. The remainder of the following list is experience of Kimberly McMurray of BHFC.*

- **Lorain County Crisis Receiving Center*** Lorain, Ohio
  A Mental Health receiving and assessment center with a first floor 16-bay Observation unit.
- **Pinnacle Treatment Center*** Martinsville, Indiana
  New, one-story, 38,300 sf 32-room (64-bed) Psychiatric Hospital. The primary function is residential inpatient treatment of opioid addiction, with additional services for treatment of co-occurring mental health disorders.
- **Pinnacle Treatment Center*** Ravenna, Ohio
  Alteration for a new 16,200 sf 36-bed detoxification unit located on the 3rd floor of University Hospitals (UH) Portage Medical Center.
- **LECOM Health*** Erie, Pennsylvania
  Millcreek ED + ICU Addition - rooms designed to eliminate ligature risks and prevent barricading of doors, all fixtures are anti-ligature and tamper proof
- **University Hospitals*** Cleveland, Ohio
  Child & Adolescent Behavioral Health Unit Renovation
- **Summa Health*** Akron, Ohio
  Behavioral Health Pavilion 4-floor Inpatient Psychiatric Units - 16 private beds

- **Anne Arundel Medical Center** Annapolis, Maryland
  PSSR for Emergency Services, Adult Crisis, Pediatric ED, M/S, and ICU Services
- **Barnes Jewish Medical Center** St. Louis, Missouri
  PSSR for Emergency Services, Adult Inpatient Unit, ICU, M/S, Outpatient Clinical Services
- **Brookdale Hospital Medical Center** Brooklyn, New York
  PSSR for Inpatient Adult Units (Two Adult Units), Inpatient Adolescent Unit, Evaluation Psychiatry Emergency Services
- **CentraCare Health** St. Cloud, Minnesota
  Patient and Staff Safety Review for Residential Behavioral Health Facilities at three residential facilities and one outpatient service locations
- **DCH Regional Medical Center** Tuscaloosa, Alabama
  Safe Room PSSR at Regional Emergency Department
- **Eating Recovery Center** Denver, Colorado
  Patient and Staff Safety Review for Adult (2-Units) and Adolescent (1-Unit) Inpatients Units
- **Fairbanks Memorial Hospital** Fairbanks, Alaska
  PSSR for Adult Emergency Services; Adult Inpatient Unit (20 beds) and Pediatric Med/Surg for Behavioral Health
- **FirstHealth of the Carolinas** Pinehurst, North Carolina
  PSSR for 1) Moore Regional Hospital Inpatient Units (50 beds); 2) Richmond Memorial Hospital Emergency Services; and 3) FirstHealth Regional Hamlet
- **Hackensack University Medical Center** Hackensack, New Jersey
  PSSR for Inpatient behavioral health unit (24 beds); Adult Emergency Services; and Pediatric Emergency Services
- **Harris Center** Houston Texas
  PSSR for Psychiatric Emergency Services Adult and Child/Adolescent Unit, Crisis Stabilization, Adult Inpatient, and Residential Unit
- **Hospital Sisters Health System** St. Mary's Decatur, Illinois
  PSSR for Emergency Services, Adult Inpatient Unit, Adolescent Inpatient Unit and Geriatric Inpatient Unit
- **Hospital Sisters Health System** St. John's Springfield, Illinois
  PSSRs for Emergency Services and Adult Inpatient Unit
- **Hutchison Regional Medical Center** Hutchinson, Kansas
  PSSR for Emergency Services, Adult Inpatient Unit, and General ICU/MS Patient Room
- **Jersey Shore University Medical Center** Neptune, New Jersey
  PSSR for Adult Inpatient Unit (30 beds); and Crisis Unit Emergency Services
- **JPS Health Network** Fort Worth, Texas
  PSSR for Psychiatric Emergency Center; Integrated Specialty Unit (16 beds); Trinity Springs Inpatient services (80 beds); and Trinity Springs North (16 beds)
- **Kingsbrook Medical Center** Brooklyn, New York
  PSSR for Inpatient Adult Inpatient Unit and Geriatric Inpatient Unit

- **Maine Medical Center, MainHealth** Portland, Maine
  PSSR for Emergency Services and Geriatric Inpatient Unit
- **Medical University of South Carolina** Charleston, South Carolina
  PSSR for Emergency Services and Inpatient Services for Geriatric, Child/Adolescent and Adult Units
- **Mercy Health System** Ann Arbor, Oakland, Livonia, Muskegon, and Chelsea, Michigan
  Patient and Staff Safety Review for five Adult Inpatient units
- **Michigan Medicine Medical Center** Ann Arbor, Michigan
  PSSR for Emergency Services, Adult Inpatient Unit, Adolescent Inpatient Unit, ECT, and Outpatient Clinical Services; providing ongoing design and construction related consulting services for behavioral health inpatient departmental renovations
- **New York City Health + Hospitals** Elmhurst, Queens, New York
  PSSR for 169 Inpatient Beds, Emergency Services, Outpatient, & other Clinical Services
- **SSM Health Agnesian Healthcare** Font du Lac, Wisconsin
  PSSRs for Emergency Services and Adult Inpatient Unit
- **St. Mary's Hospital,** Madison, Wisconsin
  Behavioral Health Inpatient Unit Renovation, 60% Construction Document Plan Review
- **University of Alabama and Alabama Department of Mental Health** Tuscaloosa, AL
  PSSR for 1) Bryce Adult Hospital (268 beds); 2) Harper Center Geriatric Hospital (96 beds); and 3) Taylor Hardin Secure Medical Facility Hospital (114 beds)
- **University of Louisville Medical Center** Louisville, Kentucky
  PSSR for Adult Inpatient Units; Adult Psychiatric Crisis and Emergency Services
- **University of New Mexico Medical Center** Albuquerque, NM
  PSSR for Adult and Geriatric Inpatient Units; Adult Psychiatric Crisis and Emergency Services; Child and Adolescent Inpatient Campus Services

6 REFERENCES

REFERENCES

Perspectus is proud of our long-standing relationships with many clients we have worked with in the past and those which are current clients. As such, we welcome you to contact the references listed for a testament to our team's work ethic and quality of services.

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BEAU HILL
Executive Director
The Salvation Army Harbor Light Complex
(216) 619-4676
beau.hill@salvationarmy.org

7 CERTIFICATION + ADDENDUM FORMS

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Name, Title) Salvatore Rini, AIA, ACHA, Managing Principal

(Printed Name and Title) Salvatore Rini, AIA, ACHA, Managing Principal

(Address) 1300 East 9th Street, Suite 910, Cleveland, OH 44114

(Phone Number) / (Fax Number) 216-377-3684 direct / 216-752-3833 fax

(email address) srini@perspectus.com

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through *wv*OASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

Perspectus Architecture, LLC
(Company)

Salvatore Rini, AIA, ACHA, Managing Principal
(Authorized Signature) (Representative Name, Title)

Salvatore Rini, AIA, ACHA, Managing Principal 9/29/22
(Printed Name and Title of Authorized Representative) (Date)

216-377-3684 direct / 216-752-3833 fax
(Phone Number) (Fax Number)

srini@perspectus.com
(Email Address)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

- [x] Addendum No. 1
- [x] Addendum No. 2
- [ ] Addendum No. 3
- [ ] Addendum No. 4
- [ ] Addendum No. 5
- [ ] Addendum No. 6
- [ ] Addendum No. 7
- [ ] Addendum No. 8
- [ ] Addendum No. 9
- [ ] Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Perspectus Architecture, LLC
Company


Authorized Signature

9/29/22
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

PERSPECTUS

1300 East 9th Street, Suite 910
Cleveland, Ohio 44114

PERSPECTUS.COM

Attachment A

Behavioral Health Design Guide

January 2022

BEHAVIORAL HEALTH DESIGN GUIDE

Formerly:
Design Guide for the Built Environment
of Behavioral Health Facilities

Kimberly N. McMurray, AIA, EDAC, NCARB, MBA

Founders and Authors Emeritus:
James M. Hunt, AIA
David M. Sine, DrBE, CSP, ARM, CPHRM

Behavioral Health Facility Consulting, LLC

Previously Published by:
National Association of Psychiatric Health Systems (NAPHS) 2003-2014
Facility Guidelines Institute (FGI) 2015-2017

Contents

Behavioral Health Design Guide

November, 2020

In an effort to keep up with the rapid increase in the number of products available for use in behavioral health facilities, our website products section will be frequently updated and this document will be updated on an annual basis. The date of each edition is on the cover and at the top of each page of the document.

Readers are urged to check: www.bhfcllc.com whenever referring to this document to assure the latest information is being accessed.

November 2019 Edition

The November 2019 edition was extensively reorganized from the previous editions of 2003 through 2018. The major difference is the inclusion of the "*Baseline Considerations*" section. This is intended to simplify and clarify the differences between the various Levels of Risk introduced in the Safety section discussion. The Section for each risk level addresses how that Level differs from the Baseline Considerations.

This document is intended to represent leading current practices, in the opinion of the authors. It does not represent minimum acceptable conditions or establish a legal "standard of care" that facilities are required to follow.

Introduction

This document is intended to address the built environment of the general adult inpatient behavioral health care unit. Additional considerations that are not addressed here are required for child and adolescent patients, patients with medical care needs, dementia patients, and some patients with diagnoses such as substance abuse and eating disorders.

This document is not a replacement for regulatory requirements, but rather augments them to detail practical means of protecting patients and staff. It is intended to represent leading current practices, in the opinion of the authors. It is not intended to represent minimum acceptable conditions and should not be interpreted as establishing a legal “standard of care” that facilities are required to follow.

Please Note: Product information included in this document is intended for illustration of one or more specific items that are deemed appropriate for use in this type of facility. Comparable products by other manufacturers that meet the same design criteria may be substituted after careful comparison.

A Word from the Authors

This Behavioral Health Design Guide is co-authored by Kimberly N. McMurray, AIA, EDAC, NCARB, MBA, Principal of Behavioral Health Facility Consulting, LLC (BHFC Design); James M. Hunt, AIA, Founder and Retired Senior Consultant of Behavioral Health Facility Consulting; and David M. Sine, DrBE, ARM, CSP, CPHRM, president of SafetyLogic Systems. Kimberly McMurray as practice leader for BHFC Design brings an architectural career dedicated to healthcare design, including a period of being on staff at a major academic medical center. McMurray is currently immersed in the daily contact with Behavioral and Mental Health organizations and designers engaged in the process of navigating through today's complex behavioral health environments.

The writing of the Behavioral Health Design Guide is based on our experiences in the field as operators, designers, consultants, and surveyors. Our goal is to share what we have seen that is working and what we have seen that has not worked. Since the document was first electronically published by the National Association of Psychiatric Health Systems (NAPHS) in 2003 we have received and welcomed countless suggestions, recommendations, and comments from users of the Design Guide, which continue to inform and lead us to new discoveries. We are grateful and humbled by how well our suggestions have been received and that they have inspired others to think of new solutions to the inherent challenges of the mental and behavioral health built environment.

We hope this edition of the Behavioral Health Design Guide (formerly the Design Guide for the Built Environment of Behavioral Health Facilities) will meet the expectations of and prove useful to the operators, clinicians and designers who are entrusted with both the care of behavioral health patients and with the environment of care in which those people are cared for and treated. For this point forward in this document, we will refer to the Behavioral Health Design Guide as simply the "Design Guide".

As always, we introduce this edition with the same reminder we used to introduce the inaugural edition in 2003: "*While a safe environment is critical, no environment of care can be totally safe and free of risk. No built environment—no matter how well designed and constructed—can be relied upon as an absolute preventive measure. Staff awareness of their environment, the latent risks of that environment, and the behavioral characteristics and needs of the patients served in that environment are absolute necessities. We also know that different organizations and different patient populations will require greater or lesser tolerance for risk; an environment for one patient population will not be appropriate for another. Each organization should continually visit and revisit their tolerance for risk and changes in the dynamics of the patient population served.*"

As in earlier editions, we have highlighted products we have found to be more safe and able to withstand the rigors of use in the behavioral health care environment. However, inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product we identify is free of risk. As well, there may be equivalent products available; all facilities should continually look to the marketplace to find products that are safer and more cost-effective.

Kimberly N. McMurray, AIA, EDAC, NCARB, MBA kimberly@bhfcllc.com

James M. Hunt, AIA jmhunt2000@gmail.com

David M. Sine, DrBE, CSP, ARM, CPHRM dsine9@gmail.com

This document is intended to represent leading current practices, in the opinion of the authors. It does not represent minimum acceptable conditions or establish a legal "standard of care" that facilities are required to follow.

Resources

***ADA* - Americans with Disabilities Act.** The Americans with Disabilities Act gives civil rights protections to individuals with disabilities similar to those provided to individuals on the basis of race, color, sex, national origin, age, and religion. It guarantees equal opportunity for individuals with disabilities in public accommodations, employment, transportation, state and local government services, and telecommunications. See www.ada.gov.

***CMS* - Centers for Medicare & Medicaid Services.** CMS is part of the U.S. Department of Health and Human Services and is responsible for the administration of the Medicare and Medicaid programs. They are currently finalizing their proposed "Clarification of Ligature Risk Interpretive Guidelines". Text of the draft is available on their website and at www.bhfcllc.com.

***FGI Guidelines* - FGI Guidelines for Design and Construction of Hospitals.** Published by the Facility Guidelines Institute and is adopted as law by some states and used by some courts as establishing a Standard of Care. Verify edition that may be adopted at any specific location with local Authorities Having Jurisdiction (AHJ). The authors recommend complying with the latest published edition for all projects. This volume includes chapters on free-standing psychiatric hospitals and psychiatric units in general hospitals. Other volumes are available for Outpatient Facilities and Residential Health Care and Support Facilities. For information on purchasing the FGI Guidelines, visit www.fgiguidelines.org.

***HIPAA* - Health Insurance Portability and Accountability Act, 1996.** The Office for Civil Rights in the U.S. Department of Health and Human Services (HHS) enforces the HIPAA Privacy Rule, which protects the privacy of individually identifiable health information; the HIPAA Security Rule, which sets national standards for the security of electronic protected health information; and the confidentiality provisions of the Patient Safety Rule, which protect identifiable information being used to analyze patient safety events and improve patient safety. See www.hhs.gov/ocr/privacy.

IAHSS - International Association for Healthcare Security and Safety
They publish security recommendations for many types of facilities, including behavioral health. See www.iahss.org

***NFPA* - National Fire Protection Association.** They publish the NFPA 101: Life Safety Code®, and many other applicable codes and regulations. For more on NFPA or links to new publications, see www.NFPA.org.

***NIC* - National Institute of Corrections.** Some of their standards may be applicable to behavioral health facilities, especially those regarding air grilles. See www.nicic.gov.

***TJC - The Joint Commission*.** There is now free access to a Suicide Prevention Portal on TJC's website. This contains the recommendations of TJC's Expert Panel on Suicide Prevention, related National Patient Safety Goals discussion regarding tools for evaluating the suicidal intention of patients. This is kept updated with the latest information and is available to all without a subscription fee.

More Information on Specific Topics

- **GLAZING: Syroka & Associates, Inc.**
  Bob Syroka, CSI - President (www.syrokaandassociates.com)
- **HOSPITAL SECURITY: Healthcare Security Consultants, Inc.**
  Thomas A. Smith, CHPA, CPP - President (www.healthcaresecurityconsultants.com)

Glossary

- **Ligature-Resistant:** TJC, in its November 2017 Edition of its *Perspectives* newsletter recommends the term "Ligature-Resistant" over "Ligature-Free" because it is not possible to remove all potential ligature risk points that could be used in a suicide attempt. It defines Ligature-Resistant as, "***Without points where a cord, rope, bedsheet, or other fabric/material can be looped or tied to create a substantial point of attachment that may result in self-harm or loss of life.***"
- **Tamper-Resistant:** For the purposes of this document, the authors use the term "tamper-resistant" to refer to items that are difficult for patients to remove or damage using items to which they typically have access.
- **Safety Risk Assessment:** The ***FGI Guidelines for the Design and Construction of Hospitals*** (2018 Edition) **Section 1.2-4 Safety Risk Assessment (SRA)** requires that such an assessment, including **Section 1.2-4.6 Behavioral and Mental Health Risk (Psychiatric Patient Injury and Suicide Prevention) Assessment** as described therein be performed for all such facilities.

A Word from BHFC

The ***Behavioral Health Design Guide*** (Design Guide) addresses the built environment for adult inpatient behavioral health care units and the evolving Design Guide was moved from its former home with the Facilities Guidelines Institute or FGI to its present home on the Behavioral Health Facility Consulting, LLC (BHFC) website, www.bhfcllc.com in 2018. We found this move necessary in order to preserve the independence of the Design Guide and, through affiliate relationships, to provide even more organizations and their members access to a document that addresses leading practice design challenges of the built environment for adult inpatient behavioral health care units.

Some of the elements of the Design Guide, such as the **Environmental Safety Risk Assessment tool**, will continue to appear in the FGI Guidelines for Design and Construction of Hospitals and Outpatient Facilities. This Design Guide provides much more detail and leading practices for protecting patients and staff as identified through the authors' years of practice in the field. The Design Guide is not intended as a replacement for regulatory requirements nor to be employed as a legal "standard of care." Its content is provided to augment the fundamental design requirements for behavioral and mental health facilities and to help providers and design teams develop physical environments that support safe and effective behavioral and mental health services.

As always, we should remind readers that the Design Guide does not discuss the additional concerns that must be addressed when designing behavioral health facilities for child and adolescent patients, patients with medical care needs, geriatric patients, or some patients with diagnoses such as substance abuse and eating disorders. These specialty population needs will be addressed in future editions of the Design Guide and the white papers will be posted on our website at www.bhfcllc.com.

The **Appendix** contains information about products that have been found to be more safe for use in the behavioral and mental health built environment but is in no way a complete list of products available that may be appropriate, while recognizing that no product is entirely without risk. We should also point out that the editors vigorously resist offers to monetize the Design Guide or be compensated by enthusiastic vendors.

The Design Guide is updated annually, and while we trust you will find the latest changes helpful, our goal is to provide updates more frequently through the products section on our website; so please return to our website occasionally to make sure you are referring to the most current Design Guide edition and referencing the latest products.

Thank you for your continued interest in and use of the Behavioral Health Design Guide.

Kimberly N, McMurray, AIA, EDAC, NCARB, MBA – Principal

James M. Hunt, AIA – Founder and Retired Senior Consultant

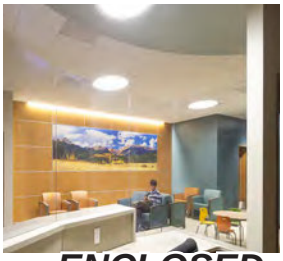
General Comments

A. Space Planning Considerations

Behavioral and mental health units and facilities are preferred to be designed to appear comfortable, attractive, relaxing and as residential in character as possible. The focus on patient and staff safety has often pushed the aesthetics of these units toward the appearance of a prison environment. To better meet the needs of patients, the final design must avoid an "institutional look" while meeting the array of applicable codes and regulations and addressing the therapeutic and safety needs of patients and staff. These no longer need to be either-or trade-offs. Both safety and therapeutic environment are possible in a well-designed facility that has a non-institutional appearance that is correct for the unique conditions that exist in each facility.

1. The ***FGI Guidelines*** Section 1.2-4 requires that a Safety Risk Assessment (SRA) be performed to determine the level of risk that is acceptable for both patients and staff in each part of the patient accessible areas of behavioral health units. The SRA Report is vital and must be consulted in reaching all safety related decisions. Refer to the *Environmental Risk Assessment* methodology, '*Section B*' described in the Design Guide for further discussion and assistance with the development of a SRA.

2. Nurse station designs are preferred to provide the least acceptable barrier between staff and patients. This goal may conflict with staff safety concerns as patients may be able to reach or jump over counters. Some facilities have found ways to design nurse stations that protect against these actions without discouraging conversation and exchange of objects between staff and patients ***(See photos at right, note fine vertical lines in the Enclosed photo)***. When minimal physical barriers are provided, it is often desirable to include a conveniently located lockable door through which staff can retreat when feeling threatened. ***HIPAA*** privacy regulations can make use of an "open" design challenging because patient records, electronic or otherwise, must be protected from view by other patients, visitors, and unauthorized staff. However, advancements in electronic medical records have somewhat reduced the need to locate all charting-related activities and spaces in the area behind the nurse station. Since the electronic "chart" can be accessed from many locations, the area around the nurse station can often be used for more patient-centered activities. When a more open nurse station is achieved, other areas where clinical staff can discuss patients without being overheard is needed.



ENCLOSED

3. Location of gathering areas for patients near the nurse station is encouraged because patients often congregate by the nurse station to socialize. It is far better to plan for this behavior and accommodate it in the original design. Such gathering areas should include comfortable seating and places for conversation, card or board games, and other quiet activities that will not distract staff working in the nurse station. Television

sets and other electronic entertainment equipment is not preferred in these locations. Many facilities are now experiencing issues, especially with younger patient populations, regarding use of personal electronic devices (e.g., iPods, MP-3 players, and similar devices). Patients say these electronics help keep them calm. Wireless earphones are strongly suggested because wires on the earphones can be hazardous.

4. Chart rooms and other staff areas should be located so staff members can have conversations and make phone calls regarding patients and other clinical matters without being overheard by patients or visitors. Teaching hospitals that have a large number of residents and/or students making rounds will need larger spaces for confidential conversations. The expanded use of electronic medical record technology is continuing to change the needs and configurations of these spaces.

5. Facilities for medication distribution should support the organization's practices but allow for flexibility. Medication management has evolved over the years from patients lining up at a window at designated times to staff taking medications to patients wherever they are on the unit. While the trend is strongly toward the latter, some facilities prefer the former or some variation of the two. This practice should be clearly defined in every facility's functional program and safety risk assessment. Flexibility should be designed into the built environment to allow for future changes in how this critical function is provided. Medication rooms and/or zones should also be provided in accordance with the requirements of the ***FGI Guidelines*** and all other applicable codes, standards and regulations.

6. Where possible, locate service areas (such as trash rooms and clean and soiled utility rooms) so they are accessible from both the unit and a service corridor. This eliminates the need for environmental staff servicing these rooms to enter the treatment areas of the unit and possibly disturb patient activities. All doors to these rooms must be kept locked at all times.

7. Traditional nurse call systems for patients to request assistance from nursing staff are not required in behavioral and mental health units by the ***FGI Guidelines***. Significant new developments in duress alarm systems greatly improve safety for staff who find themselves threatened by patients. Sensors located in all patient-accessible areas are activated using a small device that the staff members wear.[650] Staff may activate the alarm when they feel threatened and want other staff to come. Different alarm products annunciate in different ways, but many provide the exact location of the staff member activating the alarm.

8. All electrical outlets in patient rooms are required by the ***FGI Guidelines*** to be tamper-resistant, hospital-grade units on ground-fault interrupted circuits. The breakers for these circuits should be located so staff can easily access them without entering patient rooms. This is easy to accomplish in new construction but can be very difficult to achieve in remodeling projects. If receptacles with individual reset buttons are provided, they should be wired so that activation of one receptacle's breaker does not deactivate the entire circuit.

9. Where possible, locate water shut-off valves for patient accessible bathrooms in corridor walls so they can be accessed from the corridor by opening a locked access door. This

has been successfully accomplished during remodeling projects of existing units, as well as new construction projects.

10. Where possible, locate serviceable parts of patient room HVAC systems where they can be serviced without entering the room. In new construction, consideration may be given to radiant heating and cooling systems that greatly reduce the need for mechanical devices in patient rooms.

11. Housekeeping rooms should be large enough to lock away carts when not in use. All cleaning materials must be locked inside these carts at all times when carts are in patient areas or corridors and not attended by staff.

12. Smoking areas (if provided) should be outdoors. Furniture should be securely anchored in place. Provision should be made for staff observation without having to breathe secondhand smoke. No wastebaskets should be allowed in these areas. Indoor smoking is not permitted in most facilities, and many hospitals now have smoke-free campuses.

13. At the time of this writing, the ***FGI Guidelines*** require patient bedrooms to have a minimum clear floor area of: 1) 100 square feet for single-patient room; and 2) 80 square feet for multiple-patient rooms (Section 2.5-2.2.2.2). FGI indicates the maximum capacity shall be two patients (Section 2.502.2.2.1).

    Recent interpretations by FGI indicate the space under the fixed platform bed should be included within the calculation for clear floor area for behavioral and mental health facilities; based upon the significant differences with the function of the patient room in behavioral health as compared to medical and surgical patient rooms. The behavioral and mental health environment, clinical care generally does not occur inside the patient room. Behavioral and mental health patient bedrooms are designed for safety, sleeping and hygiene.

    All requirements of these ***FGI Guidelines***, the ***NFPA*** 101: Life Safety Code® (2012 Edition), applicable building codes and local AHJs regulations should be reviewed and carefully followed.

14. The concept of "*On-Stage*" and "*Off-Stage*" is widely adopted within medical healthcare facilities and is an emerging consideration for the design of behavioral and mental health facilities, especially in response to the pandemic to limit direct support staff and patient exposures. This concept separates, where possible, patient pathways (on-stage) throughout the facility from materials management food service, clean materials delivery within the facility, as well as staff support areas (off-stage). This separation of support services minimizes noise, disruption, distractions, and patient's exposure to potential elements that if accessed by the patient could be a safety risk – exposing these elements into areas actively used by patients.

15. Technology and Telehealth Resources in mental and behavioral health setting has significantly increased in both inpatient and outpatient facilities enhancing security, communications, safety (both physical and from limiting exposure to airborne viruses)

and patient care. Security enhances for technology include door control, inventory control, facility monitoring and integration of physiological reporting. Health records and multidisciplinary heath team communications include access to continually updated patient records and collaboration by all appropriate members of a patient's interdisciplinary care team; and emerging tele-mental health refers to remote visual/ audio communication between the patient and care team professionals. We are currently working with organizations where auxiliary services such as pharmacy are using telehealth resources to meet with patients rather than in person, even when these resources are physically located on campus.

B. Safety

Safety for both patients and staff is a primary concern for all behavioral and mental health facilities.

The level of concern for how the design of the built environment affects the safety of patients and staff is not the same in all parts of a behavioral health unit or facility. The level of precautions necessary depends on the staff's knowledge of the patient's intentions regarding self-harm and the amount of supervision the patient will have while using that part of the facility. Previous editions of this Design Guide have proposed that the level of concern for patient safety in the behavioral health built environment can be separated into five categories (with five being the highest level of concern). The concept is that areas that patients do not enter can be designed similar to other hospitals. Areas that patients will enter have some latitude in design, construction, and what materials can be allowed. The lowest patient accessible areas are spaces that are behind self-closing, self-locking doors and where staff are always present with patients. Much stricter requirements need to be met for areas where patients will be alone for long periods of time with minimal supervision.

These levels are discussed in detail below and illustrated by Exhibit One ***Environmental Safety Risk Assessment*** matrix. Additional discussion and review of this concept of the five risk level system has been confirmed by independent and peer-reviewed research (Bayramzadeh, S, *Health Environments Research & Design Journal* 2017, Vol.10(2) 66-80). A link to this independent research paper can be accessed through our website at www.bhfcllc.com.

Many organizations have adopted this approach of assessing levels of concern based on a functional statement of intended use and have agreed on the level of risk for rooms or spaces with similar occupant functions. However, caution is necessary as some rooms or room functions can fit comfortably into more than one category or sit on a blurry boundary between two categories. As well, the categories do not always anticipate every use of every room. This blurry boundary can result in clinical staff and facility designers basing design choices on assumptions about the use of a room and its corresponding level of concern that may not meet the actual needs of the stakeholders in an operating environment.

For example, a day room may be located within the sight line of a nurse station that "always has staff present." However, if a patient who can't sleep is in the day room watching television

at 2 a.m. and the only staff member on duty is making rounds, the patient may be “completely alone” for a period of time in a space that may contain hazards.

The authors of the Design Guide propose use of an ***Environmental Safety Risk Assessment*** (ESRA) to facilitate conversation between clinical staff and designers regarding patient and staff safety. The ESRA uses a Cartesian matrix to relate an opportunity for a patient to be alone in a space on one axis to a level of risk of self-harm on the other axis. The greater the opportunity for a patient to be alone, the greater the opportunity for self-harm and the greater the caution that should be taken regarding design choices and materials.

Although patient intent for self-harm is often opaque and difficult to assess, in the matrix we have placed “actively suicidal” on the far end of the scale and describe the opposite end as “self-harm not anticipated.” Privacy ranges from close observation (such as “1:1 observation”) on one end of the opportunity scale and the patient “completely alone” on the opposite end.

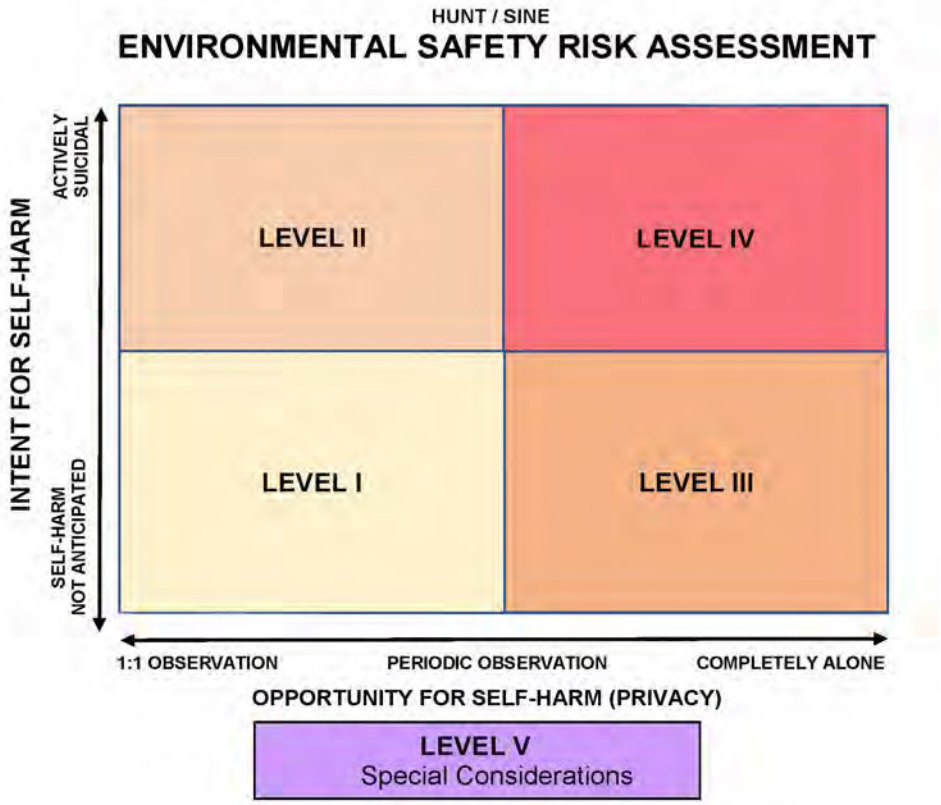
This risk matrix is informed by Veterans Health Administration longitudinal studies that have identified frequent locations of acts of self-harm by inpatients, Joint Commission data, and Richard Prouty’s seminal work on risk maps. Designers and clinicians, rather than seeking agreement on what is meant by the name of a room, may now seek to agree on the actual or anticipated degree of aloneness or privacy a patient will experience in a room or space (independent of its name), and it is that agreement that will drive design choices for the room or space.

For example, a patient bathroom in which the patient is anticipated to be alone and have privacy would be far along the privacy axis. If that assessment intersects far along the patient intent for self-harm axis, the space should be designed with the attributes of a Level IV space as described in this document. In sum, no matter the name of the room, a high level of privacy warrants a high level of concern if it is anticipated that patients who are actively suicidal (or patients with an unknown or unassessed intent for self-harm) are to be treated or housed in that space. While different products may be used for spaces with risk assessments located in the Level IV quadrant of the risk matrix than for spaces in the Level I quadrant, the higher risk locations do not necessarily need to look more “institutional.”

The authors believe the use of a tool such as the environmental safety risk assessment matrix will facilitate necessary conversations regarding patient safety and design between operators, clinicians, and designers. However, the tool is not intended to predict risk levels in a facility, which the authors believe to be dynamic and non-static. Rather, it is intended to encourage dialog and promote a common understanding of the patients designed space is intended for and the risks of that anticipated patient population.

Also note that use of the matrix should not be interpreted as a suggestion that patient privacy is not important or is a risk to be avoided. On the contrary, privacy is generally considered desirable in the behavioral health built environment, although it is associated with a risk that should be considered and mitigated through good design where possible.

EXHIBIT #1 - ENVIRONMENTAL SAFETY RISK ASSESSMENT



***Level I**: Areas where patients are not allowed.*

***Level II:** Areas behind self-closing and self-locking doors where patients are highly supervised and not left alone such as counseling rooms, activity rooms, interview rooms, group rooms as well as corridors that do not contain objects that patients can use for climbing and where staff are regularly present.*

***Level III**: Areas that are not behind self-closing and self-locking doors where patients may spend time with minimal supervision such as lounges, day rooms and corridors where staff are not regularly present. Open nurse stations should be considered under this Level*

***Level IV**: Areas where patients spend a great deal of time alone with minimal or no supervision, such as patient rooms (semi-private and private) and patient toilets.*

***Level V:** Areas where staff interact with newly admitted patients who present potential unknown risks or where patients may be in highly agitated condition. Due to these conditions, these areas fall outside the parameters of the risk map and require special considerations for patient (and staff) safety. Such areas include seclusion rooms and admission rooms.*

Construction and Materials Considerations

Each level of concern in the patient safety risk assessment matrix requires increased attention to the built environment to reduce the potential for patients harming themselves or others. There truly is no "one-size-fits-all" solution to the design of these environments. Many factors must be considered and the patient populations, staffing patterns, organizational culture and challenges of the existing built environment are unique for each unit of each facility. The authors suggest the following baseline set of considerations from which the staff of an organization can begin their considerations of what is the best solution for their facilities. The following suggestions may be adjusted to be either more or less restrictive as desired for individual applications.

A. Baseline considerations for patient areas

For the purposes of this document, the Authors have designated the needs of Level III spaces to be the Baseline for suggested conditions. Some items may be somewhat less stringent for Level II areas if such items are consistent with the Safety Risk Assessment as well as TJC and other regulatory requirements. Some items may need additional attention for Level IV and V areas as discussed in their sections.

Blind spots in corridors and other areas where patients cannot be observed from an attended staff station. All unattended rooms are suggested to be locked at all times to reduce the possibility of patients entering them.

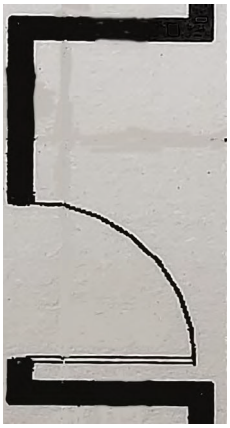
1. Openings

a. Doors:

i. Barricade Risks – The direction of swing is very important. Doors that swing into any room which patients may enter can be susceptible to being barricaded by patients. This can be either intentional or accidental (if a patient should lose consciousness and fall against the door). In either case, it can be very difficult for staff to enter the room when needed. If intentional, it can be to attempt self-harm or to inflict harm on a staff member or another patient. This risk can be mitigated in several ways listed below and illustrated on the next page:

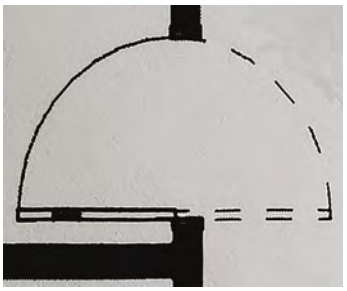
- Out-swinging doors
- Double-acting doors
- Wicket doors (door in a door)
- Unequal pair of double egress doors
- Additional door with out swing

- **Out-swinging Doors** – Doors that are hinged to swing out of the room are more difficult to barricade but may create issues with the Life Safety Code and other building codes by restricting the width of exit passageways. This may be addressed by recessing the door back from the face of a corridor wall which may create an alcove that is difficult to observe. **The *FGI Guidelines* warn that alcoves are to be avoided** *(FGI 2.5-1.5.1.1)***.**



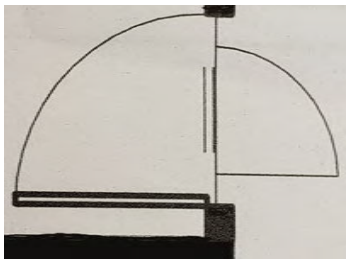
Out Swing Alcove

- **Double-Acting Doors** – doors that are hinged to normally swing into a space, but staff may release to swing out of the space is one option to the barricading risk. The hardware needed for this solution is discussed below in the Door Hardware section.



In Swing - Dbl Act'g

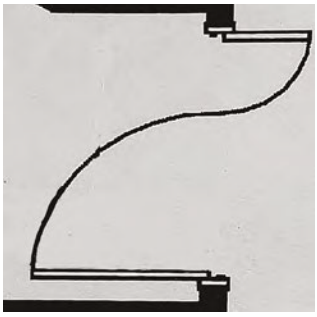
- **Wicket Doors** – These are single in-swinging doors that have a portion of the door that is locked in the closed position and is hinged to swing out of the room. This can allow access to the room if barricading occurs.



In Swing - Wicket

- **Unequal Pair of Double Egress Doors** – If there is sufficient length of corridor wall present inside the room, a pair of doors can be provided. The active leaf is normal width and for normal use and is hinged to swing into the room. The inactive leaf is narrower and hinged to swing out of the room when unlocked by staff for emergency access. These can be done with or without a vertical frame member (mullion) between the two doors. Providing the mullion allows less complicated hardware and quieter operation. Not providing the vertical frame member results in additional opening width that is sometimes desirable.

- **An Additional Door** can be provided (preferably out-swinging) that can be used by staff to leave the room or for other staff to enter the room. This can be an effective safety measure. The additional door may be into an adjacent room such as an office if the door is not needed for code compliance reasons. All "additional doors" provided for this purpose will need to be barricade resistant and meet all applicable codes and regulations.



Unequal Pair

ii. **Door Materials** – Doors in behavioral health facilities are subject to heavy use and possibly extensive abuse. They make up a significant percentage of the exposed wall surface in corridors and thus have a strong visual impact on these spaces.

- Painted steel doors are durable, easily touched up or refinished, but more institutional in appearance. Doors with wood veneer faces and stain and varnish finish are more "residential" in character but are easily damaged and difficult to repair. Plastic laminate is easily chipped and may yield sharp objects that may be used as weapons and is never advised in these facilities. If existing doors have plastic laminate for exposed surfaces it may be desirable to provide stainless steel kick plates, door edges, and other add-on devices, although these can add to an institutional look. (NOTE: The installation of kick plates may invalidate the fire rating of doors in some jurisdictions.) Kick plates and other protective devices are also available in durable synthetic materials that come in a variety of colors, which soften the stainless-steel look but can still result in a patchwork appearance.

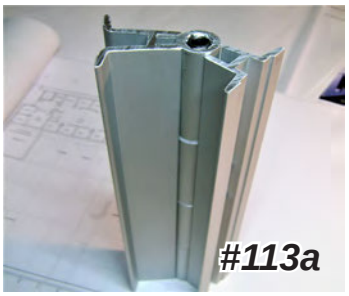

#25a

- Durable Synthetic Facing - A possible solution to these issues is doors faced with a durable synthetic that has a wood grain appearance. Some of these doors have removable end caps,[25a] which can be replaced if they become damaged at much less expense than replacing the entire door. Doors with synthetic faces without the replaceable end caps[25b] are available for a lower initial cost.

  Although the first cost for these synthetic-faced doors is higher than for doors of other materials, they do not require the added expense of finishing the doors and purchasing and installing kick plates, etc. Thus, the life cycle cost can potentially be less than for other doors, and the appearance over time may be a significant improvement.


#25b

b. Door Hardware – Hardware on doors that connect to a higher Level of Risk shall have hardware suitable for the higher level of risk.



i. **Double-Acting Continuous Hinges**[113] are preferred and can be used on patient room-to-corridor doors to counteract barricading without the hazard presented by pivot hinges. These continuous hinges can be paired with full-height emergency stops[115] that lock in place and can be easily unlocked to allow the door to swing into the corridor.

ii. **Geared-Type Single -Acting Continuous Hinges**[111] are a solution for retrofit frame conditions at doors patients will pass through and normally locked doors that have hinges exposed in patient accessible areas because they minimize possible attachment points. These hinges are available from various manufacturers with a “hospital tip” (factory installed closed-sloped top) and continuous gears that resist ligature attachment.[111] Field cutting the top of hinges to create this slope is strongly discouraged because that often exposes voids that may be used as ligature attachment points.

Geared continuous hinges do provide significant pinch points between the two leaves of the hinge when the door is closed. If this is not an acceptable risk to an organization, double acting continuous hinges that do not have this pinch point[113] can be provided.

iii. **Wicket Doors**[44] use single acting continuous hinges with hospital tips for the main door and the center portion is mounted on a continuous hinge with hospital tip (or concealed) hinge and secured with a deadbolt lock that has no visible hardware on the room side of the door. Care should be taken with the detail of the edge of the smaller panel so that a crack is not provided that can be seen through and is smoke tight if required.

iv. **Unequal Pair of Double Egress Doors** - both doors may be mounted on single acting continuous geared hinges with hospital tips. The lock-set can be the same as any other single-acting door. If the mullion is not provided, a deadlock with concealed bolts that engage the head of the door frame (and possibly the floor) is needed for the smaller inactive leaf. This deadlock is similar to item #143b except that it is preferred to not

have any visible hardware on the room side of the door. If the mullion is provided, a deadbolt that does not have any exposed hardware on the inside can be used to secure the door into the mullion

v. **Closers** – See Level II

vi. **Lock-sets** – Use of some type of ligature-resistant lock-set is recommended for all door handles in patient-accessible areas. A lock-set handle can be used for ligature attachment in three ways: pulling down, pulling up and over the top of the door, and tying something around the latch edge of the door using both the inside and outside handles (transverse). The latchbolt itself has even been used successfully as an attachment point and some companies offer a tapered bolt to help with this. The downside to the tapered bolt is that it makes it easier to open a locked door by using a small piece of cardboard or other item. Also, the opening behind the strike plate can be a ligature attachment point; for this reason, a box should always be provided behind the strike plate. In our opinion, the perfect solution for this dilemma does not exist at this time. Several of the better options are discussed below.


#130a

- Lock-sets with a Lever Handle[130] – These effectively reduce the level of risk of up and down pressure but are susceptible to transverse attachment. The lever should move freely in both directions when locked to reduce ligature attachment risks. This type of handle is more typical (less institutional) in appearance and operation than other choices. Both of these qualities are very desirable in items that patients will touch and use on a regular basis. However, lever handles may be susceptible to transverse attachment as mentioned above.


#136

- Crescent Handle Lockset[136] – This type of lock-set has a lever handle and thumb turn that are ligature-resistant and may meet ADA requirements. It is available with a handle that can be mounted in either horizontal or vertical position and allows the user's hand to easily slip off the free end.


#137b

- Push/Pull Hardware – This type of door handle is available with a flush push pad on one side and a ligature-resistant pull handle on the other.[137b]

- Modified Lever Handles[131] – These provide minimal ligature attachment risk but have an unusual appearance and operating motion. They are available in various designs.

#131a

i. **Elopement Buffers** (generally called sally ports) – The 2018 Edition of the ***FGI Guidelines*** calls for the "*primary access point to the locked unit to be through a sally port*" (Section 2.5-2.2.1.2). The Appendix for this section states that a sally port has two doors (or two sets of cross-corridor doors) that are electrically interlocked[144] and "the sally port should be long enough and the door wide enough to accommodate passage of a bed or laundry cart."

#131c

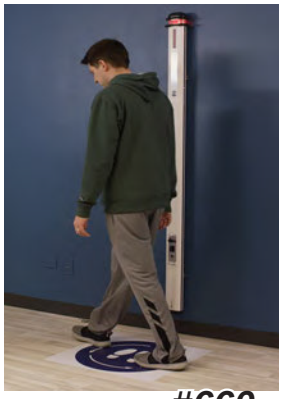
ii. **Access Control of Elopement Buffers** (sally ports) and other entry/exit points from a locked unit, including stairways.

The Safety Risk Assessment should state whether normally locked unit exit doors are going to automatically unlock when the fire alarm is activated (fail safe operation) or remain locked when the fire alarm is activated (fail secure operation). This determination should be reviewed with the local code authority for compliance with local regulations.

- Provide intercom (or telephone) for communication to staff stations from outside the unit if needed.

- Electronically controlled access systems are preferred for sally ports. These may be operated by a switch at the nurse station if the door is clearly visible from the location of the release button. (Care should be taken to assure that patients are not in the area when the door is released.) Card readers or keypads adjacent to the door are also commonly used. These are readily available from hardware suppliers and are often extensions of systems already in place at the facility.

- Metal Detectors[660] – Some organizations have expressed the desire to use metal detectors to assist with screening patients and/or visitors entering their behavioral health facilities. Some choose to use hand-held detectors and others use standard walk-



#660

through detectors. These are addressed under Section #10 Electronic Safety.

iii. Cross-Corridor Doors – These doors are provided for several reasons, and each has its own unique function and requirements. Some are part of code required fire rated partitions and normally held open and others are to restrict patient or public access and normally locked and may automatically unlock when the fire alarm is activated (fail safe operation) or remain locked when the fire alarm is activated (fail secure operation).

- When there is concern that electromagnetic locks may not be sufficient to hold these doors when impacted by patients, concealed deadbolts with the electric release in the lever handle[109] (or card reader) or electric strikes (for single doors) may be provided. Electronically controlled access systems are preferred.

- Door closers may be required or desired for these doors depending on their purpose and function. Doors that will be held in the open position will probably have an exposed arm that should be acknowledged in the Safety Risk Assessment as a known risk that the staff needs to be aware of.

- Magnetic hold-open[101] devices where required or desired for doors that are to be normally open and must close when the fire alarm is activated and are suggested to be as discussed below.

- Hinges for these doors are preferred to be continuous geared hinges with hospital tips. Pivot hinges are discouraged because the top pin is presents a serious ligature attachment risk.

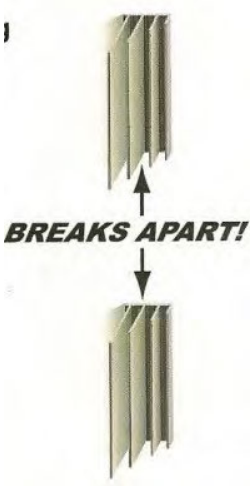
iv. Hardware for other unit doors

- Doors for which applicable codes and regulations require a closer but that need to be open to allow staff observation of patients are preferred to be provided with a closer that has a built-in release[101] that allows the door to close automatically when the fire alarm is activated. The more standard magnetic hold open devices that are separate items provide ligature attachment risks and are less desirable.

#101

- Doors that swing into rooms that patients will enter, are strongly suggested to have one of the barricade-resistant methods discussed above.

v. **Door Smoke Seals** – These may be required in some situations and are often applied with adhesive strips that can allow patients to remove them to use as ligatures. Smoke seals that break into 8”- long pieces[10] are preferred for use on all doors that patients will pass through. These are available from several manufacturers.



#10a

vi. **Door Hardware** for patient use toilet and shower room doors that open into patient accessible areas other than patient bedrooms are suggested to have the following:

- Full-size, tight-fitting doors
- Out-swinging geared continuous hinges with hospital tips or double acting hinges with emergency release stops
- Ligature resistant handles and storeroom function locks
- Closers that are either concealed or not mounted on the toilet or shower room side of the door.
- Over door alarms

vii. **Over Door Alarms** - The top of all tight-fitting doors provides a pinch point that allows a patient to tie a knot (in a sheet, the leg of a pair of jeans, or other object), place it over the top of the door, and close the door to create a hanging device. One way to reduce this risk is with a pressure-sensitive or photoelectric device placed near the top of the door that will sound an alarm[150] when activated. The door bottom can also present a risk if the “*gator roll*” technique is attempted. One product will detect this also.


#150a

c. **Windows -** When glazing that is exposed in patient-accessible areas is broken it needs to stay in the frame and not yield sharp shards that patients could use as weapons. Terminology can be confusing in that laminated glass like that used in vehicle windows is often referred to as “safety glass” but, when broken, can yield large sharp pieces. All

glazing materials that are exposed in all patient accessible areas should be considered, including the exterior surface of windows accessible from exterior courtyards to be used by patients.

The 2018 edition of the ***FGI Guidelines*** contains the following reference to window testing:

2.5-7.2.2.5 Windows...

(1) Windows located in patient care areas or areas used by patients, including the exterior pane of windows accessible by patients for outdoor courtyards, shall be designed to limit the opportunities for patients to seriously harm themselves by breaking the windows and using pieces of the broken glazing material to inflict harm to themselves or others.

(a) All glazing (both interior and exterior), borrowed lights, and glass mirrors shall be fabricated with polycarbonate or laminate on the inside of the glazing or with any glazing that meets or exceeds the requirements for Class 1.4 per ASTM F1233: Standard Test Method for Security Glazing Material and Systems.

(b) Use of tempered glass for borrowed lights shall be permitted.

(2) To prevent opportunities for suicide, self-harm, and escape, the entire window system and the anchorage for windows and window assemblies, including frames and glazing, shall be:

(a) Designed to resist impact loads of 2,000 foot-pounds applied from the inside

(b) Tested in accordance with AAMA 501.8-13: Standard Test Method for Determination of Resistance to Human Impact of Window Systems Intended for Use in Psychiatric Applications. Where operable windows are used, hinges and locking devices shall also be tested.

Advances in different types of safety glass (see “Glazing” below in this section) make it worthwhile to consult an expert for advice for a specific project.

i. **Exterior Windows** – The height above the ground, patient population, and many other factors should be taken into account in choosing these materials. Comply with the ***FGI Guidelines*** and all applicable codes and regulations for glazing, frame installation and operable sash.

   In locations where the building’s prime window does not meet the requirements of the ***FGI Guidelines***, an additional layer is sometimes provided inside of the prime window to provide the required protections.

ii. **Interior Windows -** These do not have the same concerns of falling from heights as exterior windows, but breakage concerns are similar. Careful attention should

be paid to fire-rated partitions and all applicable building and fire code regulations as well as the ***FGI Guidelines***' requirements listed above.

Some facilities prefer to use painted hollow metal window frames for these windows because they have rounded corners and aluminum frames often have very sharp corners.

#61b

d. Operable Windows – Windows in all patient-accessible areas should comply with all applicable codes and regulations for operable sash. Where operable windows are provided, they should be equipped with sash control devices that limit the opening to 4 inches per the ADA 4" ball test and that, where required, can be released to full opening using a key for evacuation purposes. Window systems are also available that allow fresh air[61] through a vent at the bottom or by sliding the window open a few inches.

e. Glazing - (Interior and Exterior) –

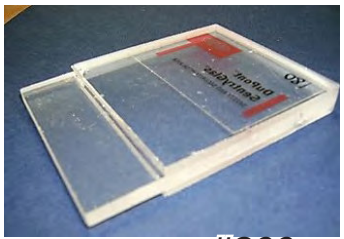
i. Standards – All glazing in patient-accessible areas should be security glazing as discussed in the ***FGI Guidelines***' subparagraph "c" above.

ii. Impact-Resistant Glass Products – Several glass manufacturers[200] offer products that may be appropriate for use in behavioral health facilities. The products chosen will vary depending on the size of the opening, type of frame, patient population being served, and location of the glazing in the unit (as determined by the patient safety risk assessment) including the distance the opening is above grade. We suggest contacting manufacturers directly to determine which products may be appropriate for a specific project.

#205a

- Fire-Rated Glass[205] – Clear fire-rated glass products are now available in a variety of types and ratings and some are rated for impact resistance.

- Glass-Clad Polycarbonate Glazing[200] – Two layers of heat-strengthened glass are bonded to a polycarbonate core. This combination keeps the broken material in the frame and reduces patient access to shards of glass that could be used as weapons and is usually available in 7/16" and 9/16" thicknesses. This type of product has been known to

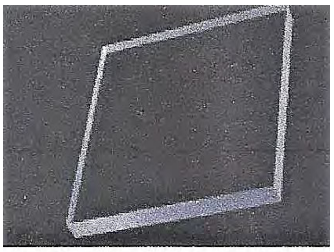


#200a

be available for lower cost than polycarbonate glazing for some projects.

- Heat-Strengthened Glass – Although more difficult to break than regular float glass, heat-strengthened glass has about half the strength of tempered glass. Heat-strengthened glass may be a good choice if it is laminated and high-impact resistance is not required for the location.

- Polycarbonate[201] (Lexan) – Polycarbonate panels are highly impact-resistant and available in a variety of thicknesses from several manufacturers. These products will deflect upon significant impact near the center of large panels that can result in large pieces coming out of their frames. Care should be taken to assure that the depth of the stop securing the panel will be able to hold it when subjected to this and other impacts. This material is also highly susceptible to scratching and is a frequent target of patients who write profanity and draw pictures. Mar-resistant coatings are available, but they do not eliminate this concern. Recent projects have indicated this may be the more expensive than glass-clad polycarbonate products.



#201a

- Security Film – If replacing existing glass is cost-prohibitive, applying a window film security laminate[190] to existing glass may be an alternative. Although these films are susceptible to scratching and defacement by patients, they may be removed and replaced at less cost than replacing glass or polycarbonate panels. The manufacturer's installation instructions should always be carefully followed including any impact-protection adhesives and a perimeter attachment system needed to hold the glass in the frame if broken. In our opinion, claims that these window films will prevent glass from breaking should not be relied upon.

- Tempered Glass – This may be acceptable for use in some patient-accessible areas such as small windows in doors, portions of glass walls separating activity rooms from corridors, and patient toilet room mirrors. Tempered glass is more impact-resistant

than float glass or laminated glass but will break into many small pieces and fall out of the frame, which may allow a patient to elope. As well, each piece may have sharp edges. Patients have been known to break tempered glass mirrors and rub the inside of their wrists on the broken surface to cut themselves or swallow the small pieces of glass. This hazard may be reduced by covering the tempered glass with a security film as described above.

#200

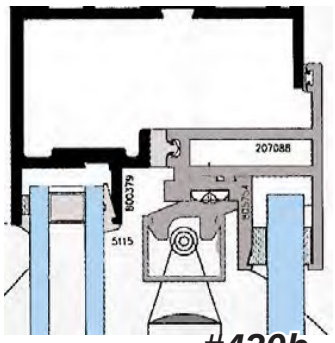
- Laminated/Heat Strengthened Glass[200] - Two layers of heat-strengthened glass bonded to a Sentry Glass Plus (SGP) interlayer, which helps the glass stay in the frame when broken.

#205b

- Wire Glass – Standard wire glass will break and yield sharp shards of glass and is generally not permitted by many current codes and regulations. There are new wire glass[205b] products that are rated for both security and fire by their manufacturers that may be considered. Verification with local AHJ is always recommended before purchasing new products.

f. Window Coverings –

i. **Mini-Blinds** – Mini-blinds mounted behind safety glass[200] are preferred because the blinds are not accessible to patients. Care should be taken to assure that any exposed devices for controlling the tilt of the blinds do not create a potential ligature attachment point. Some commercially available window assemblies have all these features.[430] Exposed mini-blinds are discouraged because they provide access to long cords, wands and slats.



#430b

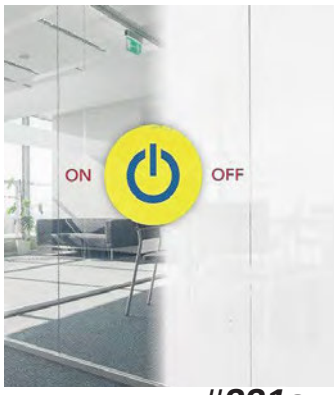
ii. **Roller Shades**[440] – Roller shades specifically manufactured for use in psychiatric hospitals are another option.

These have enclosed security roller boxes, security fasteners, cordless operation, and locking devices that resist tampering by patients may be acceptable for some patient populations. If access to these blinds by patients is deemed not acceptable by the Safety Risk Assessment, electrically operated standard roller blinds may be installed behind security glazing.

#440a

iii. **Electrically Obscured Glazing** [221] is becoming more reasonably priced and is an option for controlling privacy as long as the glazing material meets the requirements of the ***FGI Guidelines*** for glazing in patient areas.

iv. **Curtains and Curtain Tracks** – Curtains and associated tracks of any type (including those designated as "breakaway" and represented by their manufacturers as "safe for psychiatric hospitals") are NOT recommended for use in any patient-accessible areas, especially patient rooms and patient showers.



#221a

2. Finishes

a. Gypsum Board – Abrasion-resistant and impact-resistant gypsum board[230, 231] hung on 20-gauge or heavier metal studs spaced no more than16 inches on center is typically considered minimum construction for these areas. Sound-deadening gypsum board[232] is available to help reduce noise levels from traditional hard surfaces. Consult manufacturers regarding the characteristics of the material determined most appropriate for a particular installation. These products are available from several manufacturers.

A painted finish is preferred because it is easy to repair and the cost of renewing or changing colors to keep up with current trends is relatively low. Also, painted finishes help create a residential or home-like ambiance while still meeting institutional requirements.

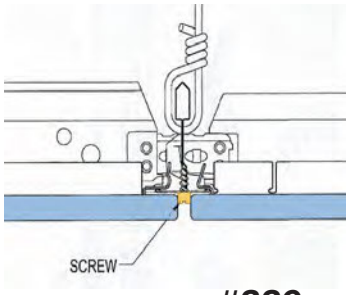
b. Ceilings – Ceiling heights lower than nine-foot-high are discouraged because it is easy for patients to reach them and tamper with the ceilings and ceiling-mounted devices. Ceiling heights of nine feet and above are not immune from tampering and must be evaluated in the Safety Risk Assessment for each area of each unit.

i. **Tamper-Resistant Ceilings** are preferred for all areas of a behavioral health facility. If sound attenuation for gypsum board ceilings is desired, sound absorbing gypsum board[232] may be used or 1'x1' acoustic tile can be adhered to the gypsum board.

ii. **Access** - Where accessibility to mechanical, electrical, and communication equipment is needed, The Joint Commission's November 2017 Edition of Perspectives

(modified by subsequent FAQ's also published in later editions of Perspectives) currently allows unsecured lay-in ceiling to be used under certain circumstances. As of this writing, the authors are not aware of any manufacturer who produces hold-down-clips that are specifically recommended for use to limit patient access above the ceiling. Systems relying on hold-down clips always result in the last tile being placed not being secured unless some form of locked access panel is provided to allow installation of the clip on the last tile.

iii. **Existing Ceiling Grid System** - There are several tamper-resistant solutions that can reuse the existing ceiling grid system and may be less expensive than typical gypsum board ceiling installation that may be considered:



#239a

- Remove existing ceiling tile and install specialty 2'x2' metal ceiling panels[239] with tamper-resistant screws in the recessed joints to resist removal. This system will allow access at any point and is available in sound absorbing models.

#234a

- Remove existing ceiling tile and install special clips[234] that are made to fit over existing grid members that are at least intermediate grade steel system (not aluminum). Then attach 5/8" thick sound absorbing gypsum board ceiling (mud and tape joints – paint) to these clips. Lockable access panels will be required at all necessary locations. It may be necessary to support light fixtures, etc. independently of the existing grid to avoid overloading the carrying capacity of the existing grid.

b. Wall Base – Use of thin, flexible rubber or vinyl baseboards that are applied only with adhesive and are intended to cover the joint between the wall and floor is strongly discouraged. These become prime targets for patient tampering and can be used to conceal contraband.

There are several alternative choices for base material and installation that may offer less risk:

i. **Seamless epoxy flooring**[250] that has an integral coved base is an option as long as there is no metal or plastic edge strip on the top of the base.

#250c

ii. **A premolded base**[240] that extends onto the floor plane, finishes flush with the top of the floor tile, and is heat-welded to the flooring may be acceptable in some locations. However, use of this product does not address the issue of hiding contraband unless the top edge is sealed with a pick-resistant sealant.[20]

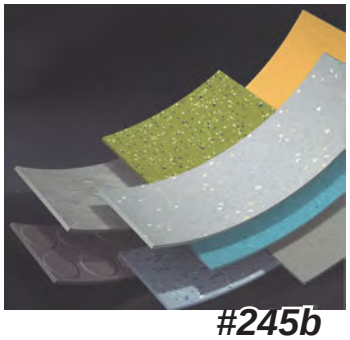
#240

iii. **Wall and Floor** A thick rubber base that resembles wood base profiles [241] is available and provides a more "residential" appearance. All joints to the and all vertical joints should be sealed with a pick-resistant sealant.[20]

iv. **Wood Base** - in some cases, a wood base with a minimum ¾" thickness that is adhered to the wall, secured with countersunk tamper-resistant fasteners, and sealed with pick-resistant sealant[20] has been used successfully. If desired, this can be given a semi-transparent stain finish to provide more of a residential look.

#241a

b. Flooring – Carpet[255] or sheet vinyl[245] meeting class A rating should be used. Avoid patterns and color combinations that may appear to "animate", abrupt contrasting color changes that could appear as objects that need to be stepped over or other visual misperceptions by patients. Anti-microbial sheet carpet (formerly called "broadloom") with solution-dyed yarn and moisture-resistant backing[255] is effective in reducing ambient noise and generally works well in these facilities. This is available from most major carpet companies. Sheet vinyl[245] or other hard surface material is preferred where wet or potentially messy activities will be conducted.



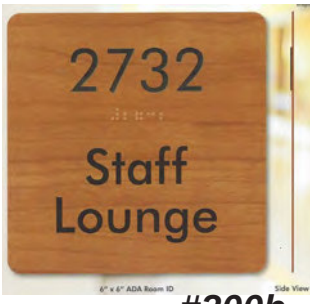
#245b

c. Abrasion Resistant Coatings[280] – Any areas where excessive wear is anticipated, such as corridors and seclusion rooms without wall padding may be coated with paint materials that have more resistance to abrasion and possible abuse.

3. Specialties

a. Signage – Room Signs[300]

i. **Flexible Room Signs** are available that are applied with adhesive and will not provide a weapon to patients



#300b

if removed. These can include braille lettering and meet ADA requirements.

ii. **Rigid room signs**[300d] that are installed with multiple tamper-resistant screws are more difficult to remove and also can include braille lettering to meet ADA requirements.

#300d

b. Corridor Handrails – may not be required in behavioral health units but may be indicated as needed by the Safety Risk Assessment because of needs of the patient population being served having equilibrium issues due to medication side effects or other reasons. If these are provided, there is a choice between leaving the anchors for the rail exposed (which creates ligature attachment point opportunities) and providing a solid filler between the rail and the wall (which helps reduce ligature attachment points and creates a place for trash to collect and can be an infection control cleaning problem). The "correct" answer for any given section of railing will depend on the facility's Safety Risk Assessment and the amount of observation of the specific location.


#330a

c. Wall Protection – Large sheets of durable wall protection material are available in solid color finish or with a wide variety of printed artwork.[320] However, the standard vinyl trim pieces that come with this material are <u>not</u> recommended for use in behavioral health applications. Rather, the edges of the material are suggested to be tightly fitted together and sealed with pick-resistant caulk.[20]

#320

d. Toilet Accessories – See Level IVb

e. Mirrors and Domes:

i. **Mirrors** - Glass-laminated polycarbonate mirrors in ligature resistant wood frames[360] offer an option with a residential appearance and are scratch resistant. (See also Level IVb-3f for toilet room mirrors)


#360a

ii. **Observation Dome Mirrors** – Convex mirrors installed in corridors, seclusion rooms, and other patient-accessible locations to assist with observation of patients are preferred to be made of a polycarbonate that is a minimum of 1/4" thick, filled with high-density foam, and have a heavy metal frame that fits tightly to the wall and ceiling.[420] Convex mirrors made of polished steel are also available. The perimeter of the mirror is recommended to be sealed with pick-resistant caulking.[20]


#420a

f. Pick-Resistant Caulk – Pick-resistant caulking[20] is strongly suggested for all joints between objects and surfaces that do not fit tightly and may provide opportunities for patients to hide contraband, attach ligatures or grip items to remove them. It is preferred that this material not set up hard (like epoxy) but remain pliable and be able to move with its substrate over time. Verify compatibility with all adjacent materials before application.

#20b

g. Paper Trash Receptacle Liners - Coated paper liners[1] are strongly suggested for all trash receptacles to which patients have access including large receptacles in dining and activity spaces. Paper liners with rope handles may present ligature risks. Plastic liners should be prohibited because of the risk of suffocation.

#1

h. Kitchen Equipment Considerations - (Levels II and III only)

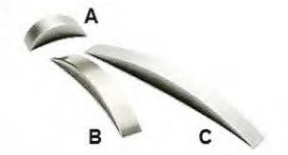
4. Furnishings

a. Built-in Cabinets - (securely anchored in place)

i. Cabinet Doors -

- All cabinets that contain items that patients are not to have access at all times they are present in the space are strongly suggested to have lockable doors.

- Cabinets that contain items that patients are allowed to access at all times they are in the space are strongly suggested to not have doors and to have shelves that are securely fixed in position to resist both upward and downward pressure. Adjustable shelves are discouraged because they are easily removable and may be used as weapons.



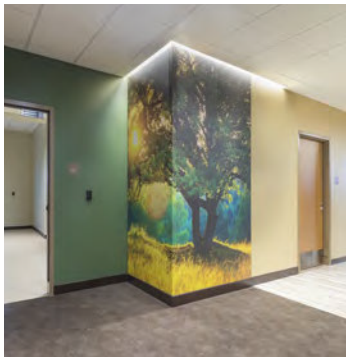
#460a

ii. Cabinet Pulls – These are suggested to be recessed, with no protruding openings, or of a closed ligature-resistant type.[460]

iii. Cabinet Locks – These are very important in all patient-accessible areas. Cabinets used to store items that patients could use to harm themselves or others should be kept locked at all times when patients are present. This can lead to staff constantly looking for

#465a

the right key on a large key chain. One solution is to provide locks that can be unlocked with a key that staff already carry, such as the key used to activate the fire alarm. Another solution is to use existing key access cards or a pushbutton keypad.[465] These are becoming more affordable and should be particularly helpful in examination/treatment rooms and any locked cabinets in patient rooms.



b. Decorative Crafts - Pictures and Artwork – All pictures and artwork in patient-accessible areas must be given special consideration:

i. Murals – These can brighten and add interest to corridors and day rooms and have been used very effectively in some facilities. It is usually a good idea to cover them with at least two coats of a clear sealer for protection, but patients typically enjoy these and defacing them is not usually a problem. Murals are also available on wall vinyl and wall protection materials.

#320b

ii. Wall Protection – Large sheets of durable wall protection material are available with a wide variety of printed artwork.[320] However, the standard vinyl trim pieces that often come with this material is not recommended for use in behavioral health applications. Rather, the edges of the material could be tightly fitted together and sealed with pick-resistant caulk.[20]

#476b

iii. Frames – Specially designed frames[476] that slope away from the wall and have polycarbonate[201] glazing are recommended. The frames that are screwed to the walls with a minimum of one tamper-resistant screw[470] per side are preferred to provide a tight fit to walls which may have uneven surfaces. The joint at the top is suggested be sealed with a pick-resistant sealant.[20] Some of these frames allow for easy replacement of the images and provide the opportunity for patients to customize the displays with personal photos, etc.

iv. Printed Flexible Vinyl – Another option is to print artwork on flexible vinyl[301] that can be attached to walls with low-tack adhesive or regular wall vinyl adhesive for more permanent installations. This method reduces the risk of patients obtaining harmful materials. The low-tack adhesive used on smaller images makes it easier to change the art displayed on a seasonal or other basis and allows hospitals to offer patients a choice of artwork

to display in their rooms, giving them some control over their environment.

#482h

c. Seating - Furniture used in behavioral health facilities is preferred to be easily cleaned, easily reupholstered, very sturdy, and as heavy as possible to minimize the likelihood of patients throwing chairs, tables, etc. Where indicated by the Safety Risk Assessment, furniture is suggested to be securely anchored in place or weighted to resist stacking or barricading of doors. Closed arms and legs are preferred to resist attachment of ligatures and breaking into items that could be used as weapons.[482] Upholstered lounge chairs with arms[482] that resemble typical residential furniture are generally preferred, but polyethylene rotationally molded[483] and sand-ballasted seating is now available with a less institutional look. The health care organization should select furniture appropriate for the patient population served and the location on the unit for which it is intended.

#482a

Where movable seating is needed (e.g., dining and activity rooms), very lightweight polypropylene chairs[480] that resist breaking into sharp pieces are preferred. An alternative is a chair that can be partially filled with sand (or otherwise have weight added) to make it difficult to throw or use as a weapon.[480]

#483

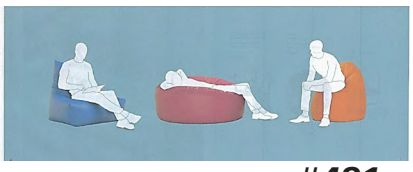
Comfort Rooms and other lounge areas may have specialty or chaise lounges[482i] or bean bag[481d] type seating that are manufactured without zippers and with very durable materials and seams.

Rocking motion has long been believed to be soothing and several companies now offer specially designed seating that allow a rocking motion.[483] Care should be taken to realize that it is not uncommon for unauthorized movement of furniture from a low-level risk area to a higher risk area of a unit to occur. This may result in unintended risks being created.

#480b

All upholstery and foam used in furniture should have

#483b



#481

#482i

flame-spread ratings that comply with the requirements of Section 10.3 of ***NFPA*** 101: Life Safety Code® and all other applicable codes and standards.

d. Furniture:

i. **Tables for dining and activities** are available with enclosed legs[485] and provide less opportunities for ligature attachment. These are usually either center pedestal or "X" base style. Both can be weighted down with sand to reduce the chance that they can be picked up and thrown but can still be movable. A range of styles and shapes of tops are available for both types.

#485a

ii. **End tables and coffee tables** are available in enclosed cubes or drums[485c] and other configurations that are also ligature resistant and can be weighted.

#485c

iii. **Shelving units** for items to which patients will have free access are suggested to be sturdy, have open shelves that are fixed in place (not adjustable) and securely anchored in place. The tops of taller units are suggested to be sloped to resist storage and anchored to resist them being tipped over.

5. Fire Suppression

a. Fire Sprinkler Heads - Institutional heads[520] that are ligature-resistant are preferred.

#520a

b. Fire Extinguisher Cabinets - All fire alarm pull stations and all fire extinguisher cabinets[521] are suggested to be locked (with approval of all applicable code authorities). All staff on duty must carry keys for these at all times. These keys should be provided with a red plastic ring or other means of providing quick identification. In addition, fire extinguisher cabinets are preferred to have continuous hinges, recessed pulls (if any), and polycarbonate glazing if view windows are provided.

#521a

6. Plumbing Fixtures and Fittings

a. Toilet Fixtures – Patient accessible toilets are always considered Level IV and V areas and are addressed in those sections.

b. Sinks –

i. **Standard Stainless-Steel Sinks** may be permitted if that is consistent with the organization's Safety Risk Assessment and are suggested to be designed into recesses with doors or roll-down shutters that can be locked when staff are not present.

ii. **Bathroom Sinks** are addressed in Level IV and V sections.

iii. **Hand-washing Sinks** for staff that are in patient accessible areas are suggested to be specially designed units. See subparagraph "h" below.

c. Showers - Patient accessible showers are only permitted in Level IV and V areas and are addressed in those sections.

d. Faucets – Patient use faucets are primarily inpatient bathrooms and are addressed in Levels IV and V. Faucets in activity and similar rooms are addressed in Levels II and III.

e. Flush Valves - Patient accessible flush valves are permitted only in Level IV and V areas and are addressed in those sections.

f. Water Stations – Ligature-Resistant Drinking Water Stations[589] – Drinking fountains are often required or desired in common spaces on units. Typical drinking fountains can be problematic for ligature and infection control reasons but requiring patients to ask staff every time they want a drink of water can rank high on patient dissatisfaction surveys.

To address this issue, consider use of water cup-filling stations in patient-accessible areas. Several options are available for cup-filling stations[589] that have either local or remote refrigeration units, in both wall-mounted and counter-top styles.

g. Medical Gases – These are not normally required for behavioral health units. If there is medical necessity or the outlets are a preexisting condition in remodeling projects,

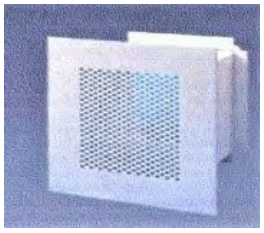
#589b

#590c

they should be covered with lockable panels[590] or panels attached with tamper-resistant screws. These should be removed only to address the medical needs of the current patient and replaced when that patient is discharged or moved. Special care must be taken in areas where other patients may be present to assure that access to the medical gases does not present a safety risk to them also. Some manufacturers offer lockable covers for outlets.

#545

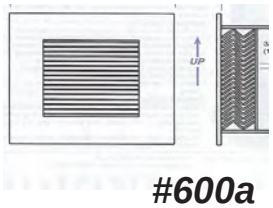
h. **Staff Hand-washing Stations -** Staff Hand-washing stations[545] for patient accessible areas are now available that provide less risk than standard fixtures. These are recessed and have integral soap dispensers and air dryers to eliminate the need for separate dispensers which may also provide risks. All hand-washing sinks that are accessible to patients need to be ligature-resistant.



#602a

7. HVAC

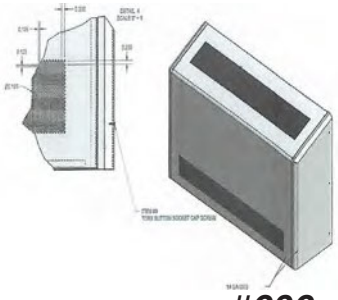
a. **Diffusers, Registers and Grilles -** Grilles with small perforations[602] or with "S" shaped vanes[600] that comply with the National Institute of Corrections standards and are secured in place with tamper-resistant fasteners are generally acceptable in patient accessible areas if allowed by the Safety Risk Assessment.



#600a

b. **Where existing fan/coil units** (as well as fin-tube heaters or old-style radiators) are present in patient accessible spaces, they are strongly suggested to be protected with vandal-resistant covers.[606]

c. **Thermostats –** Existing pneumatic or electric thermostats may be acceptable for use in patient accessible areas if allowed by the Safety Risk Assessment. If they are found to be problematic, there are covers available to reduce the risk of patients tampering with them and gaining access to small parts which they could use to harm themselves or others. However, sometimes these covers draw more attention to the thermostats and encourage tampering. If these become an issue or are an identified risk in the Safety Risk Assessment, consideration could be given to relocating the thermostats to return air ducts or use of aspirating or thermistor units that are mounted behind a stainless-steel cover that is flush with the wall.[607]



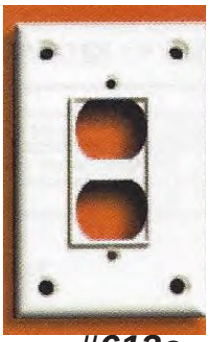
#606

#610

8. Electrical

a. Electrical Devices:

i. **Receptacles** - In new construction or major remodeling, the ***FGI Guidelines*** require a dedicated circuit for all electrical outlets in each patient room and bath. This will allow power to the outlets in a specific room to be turned off if necessary for a patient's safety. Control of each circuit should be located where only staff have access. Where this is not practical in an existing facility, the outlet may be temporarily covered.



#612c

ii. ***FGI Guidelines*** also state that all electrical outlets in patient rooms and patient toilet rooms be a hospital-grade, tamper-resistant type. Use of GFCI receptacles[610] is also preferred to reduce the risk of patients being able to harm themselves by tampering with the receptacles. Arc-fault devices are available and may be provided if required by the Safety Risk Assessment for the patient population being served.

620b

iii. **Cover Plates** - All electrical device cover plates (for switches, receptacles, blank cover plates, etc.) must be attached with tamper-resistant screws.[470] Cover plates made of polycarbonate[612] materials are preferred; polycarbonate cover plates must have screws in each corner to make them rigid enough to resist bending and protect patients from access to electrical wiring and contacts. Nylon cover plates and ones marketed as "unbreakable" are typically not sturdy enough to resist tampering by patients. Standard stainless-steel cover plates that fit tightly to the wall and are rigid may be acceptable for many patient populations if allowed by the Safety Risk Assessment. These may be secured with a single tamper-resistant screw in the center as long as it is securely tightened. The tightness of these screws and fit to the wall is suggested to be included in regular safety rounds documentation.

b. Light Fixtures:

i. **Tamper-Resistant** - All fixtures that can be reached by patients are suggested to be a tamper-resistant type[620] and have minimum ¼"-thick polycarbonate (clear or prismatic) lenses[634] securely fixed in the frame with covers that are firmly secured with tamper-resistant

screws[470] and fit tightly to the ceiling surface. Many such fixtures are now available with LED light sources.

#620c

ii. **LED** - Advances in LED technology have resulted in new options for light fixture designs that can help reduce the institutional character of these spaces. The authors strongly encourage the use of these options and discourage the use of 2'x2' and 2'x4' light fixtures in all patient accessible locations. Our preference is for using linear, round or oval vandal-resistant fixtures for general illumination and recessed security downlights with polycarbonate lenses or small individual reading lights.

iii. **Color Temperature** - The availability of tunable lighting (ability to adjust the color temperature of the light source) is encouraged as is the use of circadian lighting systems.

#624

iv. **Glass Components** that could be accessed by patients are discouraged for use in any fixture. Use of table lamps or desk lamps are also strongly discouraged. Neither incandescent light bulbs nor fluorescent tubes should ever be accessible to patients.

c. **Exit Signs - Lighted Exit Signs[640] or Photo-luminescent Signs[642] –** These are suggested to be vandal-resistant and installed tight to the ceiling with a full-length mounting bracket to avoid use as a hanging device. Mounting these signs on a wall so they are perpendicular to the wall is not recommended because it leaves the top exposed as a possible attachment point.

#640a

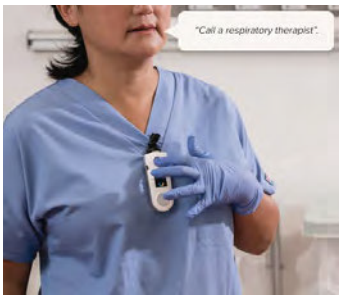
9. Communications

a. **Telephone Sets -** Telephones located in corridors or common spaces for patient use should have a stainless-steel case,[645] be securely mounted to the wall, and have a non-removable shielded cord of minimal length (as approved by the Safety Risk Assessment) with cable tether inside the shield. They may be equipped with or without touch pads for placing outbound calls. Some organizations have a switch installed in a staff area to deactivate patient use phones at times when patients are not allowed to make calls.

Some facilities are now providing cordless phones for patient use.

#645a

b. Duress Alarms – Patient to staff injuries are a significant concern in many facilities. One way to address this (other than designing the unit to eliminate locations where staff may become isolated with a patient and become trapped) is to provide some type of personal duress alarm system[650] that staff members can wear and activate when needed. It is preferred that these systems provide information on the location of the staff member when the alert is sent. Some of these can interface with other systems that may already be present in the facility and even use existing wi-fi systems for connectivity.



#650f

10. Electronic Safety

a. Metal Detectors - Some organizations have expressed the desire to use metal detectors to assist with screening patients and/or visitors to their behavioral health facilities. Some choose to use hand-held detectors and others use standard walk-through detectors. Organizations considering metal detection solutions may want to investigate ferrous metal detection systems[660] that sense the presence of ferrous metal in objects such as razor blades, syringes, lighters, cell phones, knives and guns. These systems will not detect drugs or other nonferrous metal contraband items.

#660

11. Exterior Improvements - Outdoor Areas

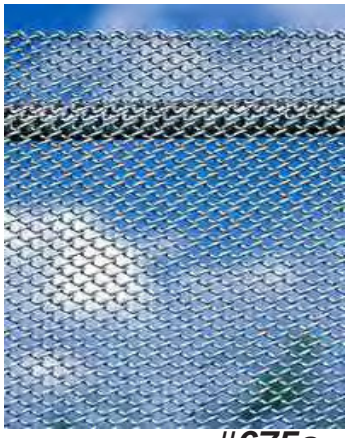
a. Enclosed courtyards, fenced areas adjacent to a treatment unit, or an open campus are considered to have great therapeutic benefit. Because levels of staff supervision for patients using outdoor areas may vary widely between facilities, or even between different groups using the same space at different times, the need for supervision should be carefully reviewed by management early in a design and construction project. The final design for outdoor areas must respond to the acuity and assessment of the most acute patients using the area and the planned staffing levels for each patient population.

b. Fencing - Climbable fences can permit, if not encourage, unauthorized access to windows and roofs or elopement over walls. Buildings, walls, or fences may be used to establish clear boundaries and impede elopement to a

#675d

degree appropriate to the patient population being served. Some behavioral health organizations are comfortable with a perimeter enclosure that is not particularly difficult to climb and simply make elopements a treatment issue if the patients return. Other organizations have a very high need to reduce elopements to the extent possible. Where this is the case, designers may tend to create enclosures that have a very prison-like appearance. If views to the distance are not required, one approach is to treat the outdoor areas as meditation gardens with solid masonry walls that have a smooth interior surface and are 12 to 14 feet high.

i. **Top Fence Protection** - One facility installed large diameter (22”-24”) plastic pipe on top of the wall to make it difficult for patients to get a grip on the top surface. This pipe can be painted to match the color scheme of the building and provides a much less institutional appearance than concertina wire. If views to the distance are desired, “windows” glazed with polycarbonate[201] or security glass[200] may be provided in these walls. These view panels should not have sills or cross bars that could provide toeholds for climbing.



#675a

ii. **Fence Material** - Another option is installation of a fine mesh chain-link fence fabric.[675] This fabric, which comes in a range of sizes down to as small as 3/8” openings, makes the fence more difficult to climb and has openings that are too small for most bolt cutters. When installing such material, fence posts and rails must be strong enough to support the fabric and the wind loading it will add. In at least one instance, a patient successfully climbed a mini-mesh fence, so it is suggested a section at the top be angled inward to further increase the difficulty of climbing at the cost of increasing institutional appearance.

#675b

iii. **Maximum security fencing**,[675b] which has a very prison-like appearance, may be selected for some facilities with involuntarily admitted patients. However, it is suggested that the use of less institutional-looking solutions be explored before deciding to use this type of material.

iv. **Enclosed Courtyard** - Where portions of the building walls will enclose exterior courtyards for patient use, these walls should not be easily climbable, especially if they are only one story high. Windowsills, rain gutters, and similar features may support efforts to climb walls

to gain access to the roof. The exterior surface of all windows patients can access from exterior courtyards must have security glazing,[200] polycarbonate glazing,[201] or security window film,[190] as described under Level II-D.

c. **Outdoor Furniture -** In all cases, careful consideration should be given to exterior furniture used by patients. All outdoor furniture[510] is suggested to be firmly anchored in place. This will resist the furniture from being moved to create barricades or stacked to allow climbing over fences, into windows, or onto buildings. Many types of commercially available furniture can be anchored or are made of concrete or other heavy materials.

d. **Plant Materials -** Shrubbery should be non-toxic and low-growing. Avoid planting shrubbery close together as it can create visual barriers that patients or unauthorized visitors may hide behind. Landscape mulch or decorative rocks that can be thrown to injure staff or other patients should not be used. Trees should be located away from buildings, walls and fences to reduce ease of access to roofs or getting over fences.

e. **Area Drains and Manhole Covers -** All manhole covers, access panels, and area drain grates should be anchored firmly in place to discourage easy removal and use as weapons and to make it difficult for patients to enter the underground piping.

f. **Public Areas -** All areas surrounding patient use buildings, areas where staff will walk or escort patients at night, and courtyards should be well-lighted. Exterior lights should not shine directly into patient room windows. Parking areas for staff and visitors should be well-lighted and reviewed regularly for design features that encourage personal and property security. While security is generally beyond the intended scope of this document, closed-circuit television monitoring and video surveillance recording of these semi-public areas, where there is no expectation of privacy, should be considered.

B. Level I

Areas where patients are not allowed:

All items do NOT need to comply with Baseline conditions but are suggested to meet the following:

1. Comply with all applicable codes and regulations.
2. All service areas should be locked at all times to reduce the possibility of patients entering these spaces.
3. Hardware on doors that connect to a higher Level of Risk (accessible to patients) shall have hardware suitable for the higher level of risk.

C. Level II

Areas behind self-closing and self-locking doors where patients are highly supervised and NEVER left alone which could be counseling rooms, activity rooms, interview rooms, group rooms, exam rooms, as well as corridors that do not contain objects that patients can use for climbing and where staff are regularly present:

Architect of Record - Davis Partnership, Denver,CO: Photographer - Paul Brokering Photography

Architect of Record - Davis Partnership, Denver,CO: Photographer - Paul Brokering Photography

All items same as Baseline with the following exceptions:

Our understanding of The Joint Commission's recommendations at the time of this publication is that the conditions identified in the "***Baseline Considerations for Patient Accessible Areas***" above may be revised as stated below in Level II areas. It is strongly suggested that these revisions only be made after careful consideration and if these variations are consistent with the organization's Safety Risk Assessment. The Safety Risk Assessment should identify all standard items that typically are not allowed on inpatient behavioral health units that are present in rooms that are defined as Level II in this document.

An examination room is required by the FGI Guidelines. When the exam room is located on the unit, the equipment in these rooms present potential risk; therefore suggested to be designated as a Level II with self-closing and self-locking doors. The room is suggested to be large enough to allow several staff to physically manage the patient. If possible, a staff member should not be in the room alone with a patient.

1. Openings

a. Doors - Barricading considerations discussed in Baseline section above are highly recommended for doors to all rooms that patients will enter.

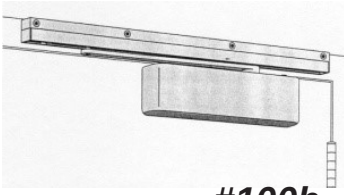
b. Door Hardware:

i. **Self-Closing Self-Locking** - All unattended counseling rooms, interview rooms, exam rooms and other rooms patients may enter only when staff are present are suggested to have self-closing and self-locking doors.

ii. **Storeroom Function** - For Level II rooms to comply with the SRA definition calling for self-locking hardware, are suggested to have "storeroom" function lock-sets with which the doors will always be locked from the outside when closed and latched. The inside lever will always be free.

#100a

iii. **Closers** are needed for Level II rooms which TJC requires to have self-closing and self-locking doors and that staff must ALWAYS be present when patients are in the room. They may be required for other doors by building and life safety codes or because the staff want to assure that a particular doors are not accidentally left open for operational reasons. Where provided, concealed closers[100a] that have the closer and the track both completely contained in the



#100b

head of the door and frame offer the least amount of ligature attachment opportunity (the arm is only exposed when the door is open). However, these require special preparation of the door and frame and are difficult and expensive to provide in existing conditions. Where concealed closers are not practical, it is suggested that surface mounted track closers[100b] be provided and located on the side of the door that either patients are not allowed (Level I spaces) or where the closers are most observable by staff.

2. Finishes

a. Ceilings – Our understanding of current TJC recommendations is that accessible lay-in type ceilings are acceptable in Level II spaces if that is consistent with the organization's Safety Risk Assessment.

b. Wall Base – Standard surface applied thin vinyl or rubber base may be acceptable if that is consistent with the organization's Safety Risk Assessment.

3. Specialties

a. Kitchen Equipment: (Same as Level III except may not need to be lockable if acceptable under the Safety Risk Assessment.)

4. Furnishings

The use of furniture that is lighter weight, easily movable and that has obvious opportunities for ligature attachment in Level II rooms may be acceptable to TJC and can be considered for use if it complies with the findings of the Safety Risk Assessment performed by the organization.

The health care organization should select furniture appropriate for the patient population served and the location on the unit for which it is intended. Care should be taken to realize that it is not uncommon for unauthorized movement of furniture from a low-level risk area to a higher risk area of a unit to occur. This may result in unintended risks being created.

a. **Seating -** Open arms and legs on un-weighted furniture that is not securely fixed in position may be acceptable if consistent with the Safety Risk Assessment. High-quality wood, steel or plastic chairs for use at tables may be more standard products. Upholstered lounge chairs[482] that resemble typical residential furniture are generally preferred.

b. **Tables** may be more typical style[485], have individual legs at the corners and be easily movable to accommodate a range of uses and activities; consideration for weighted tables for Level II areas.

c. **Bookcases and Cabinets -** Same as Baseline except as may be allowed by Safety Risk Assessment for areas behind self-closing and self-locking doors as discussed above.

#482j

#485b

6. Plumbing Fixtures and Fittings

a. **Toilet Fixtures -** Level IV and V areas only

b. **Sinks –** Standard stainless-steel sinks may be permitted if that is consistent with the organization's Safety Risk Assessment, but caution is recommended.

c. **Showers -** Level IV and V areas only

d. **Faucets -** Standard goose-neck faucets and standard valve handles may be permitted in activity and similar areas that are consistent with the organization's Safety Risk Assessment, but caution is recommended.

e. **Flush Valves -** Level IV and V areas only

f. **Medical Gases -** Not typically present in Level II areas

7. HVAC

a. **Diffusers, Registers and Grilles –** Standard products may be acceptable if that is consistent with the organization's Safety Risk Assessment. Products consistent with Level III suggestions are recommended.

b. **Thermostats –** Standard products may be acceptable if that is consistent with the organization's Safety Risk

Assessment. Products consistent with Level III suggestions are recommended.

8. Electrical

a. Electrical Devices: Standard products of this type may be acceptable if that is consistent with the organization's Safety Risk Assessment.

b. Light Fixtures –

#630

i. **Standard products** may be acceptable if that is consistent with the organization's Safety Risk Assessment. Products consistent with Level III suggestions are recommended.

ii. **Covers**[630] are available for existing (or new) downlights that are secure and make the appearance more residential in nature.

iii. **No glass components** should be exposed to patients in any fixture and use of table lamps and desk lamps is strongly discouraged.

c. Exit Signs - Standard products may be acceptable if that is consistent with the organization's Safety Risk Assessment. Products consistent with Level III suggestions are recommended. The mounting bracket suggested to be full length of the fixture.

d. Security Lighting - Standard products may be acceptable if that is consistent with the organization's Safety Risk Assessment. Products consistent with Level III suggestions are recommended.

D. Level III

Areas that are <u>not</u> behind self-closing and self-locking doors where patients may spend time with minimal supervision such as open lounges, day-rooms and corridors where staff are not regularly present. Open nurse stations are suggested to be considered under this Level because there may be incidents where staff will not always be present in these spaces:

Architect of record: Progressive AE, Grand Rapids, MI - Photographer: JRP Studios

Architect of Record - Davis Partnership, Denver,CO: Photographer - Paul Brokering Photography

Architect of Record - Bernstein & Associates, New York, NY - Photographer: Paul Warchol

This document is intended to represent leading current practices, in the opinion of the authors. It does not represent minimum acceptable conditions or establish a legal "standard of care" that facilities are required to follow.

All items shall be the same as Baseline with the following exceptions:

3. Specialties

a. Kitchen Equipment: (Typically Levels II and III only) -

All cooking appliances (ranges, microwaves, coffee makers, etc.) should have key-operated lockout switches[611] to disable the appliance. If these and other appliances, such as refrigerators, have open handles that could be used as ligature attachment points, and they are in areas where patients have unsupervised access to them, provisions should be made to close them off with overhead coiling doors or other means.

#611

i. Patient access to coffee should be carefully considered in each facility's Safety Risk Assessment (SRA). If access to this (and other potentially scalding liquids) is allowed, an insulated plastic dispenser should be located so it is readily observable by staff. Glass coffee pots should never be available to patients.

ii. All garbage disposal units should have a key-operated lockout switch[611] to disable the device.

iii. All receptacles located near sources of water, including sinks, as well as all patient-accessible receptacles must be GFCI-protected as required by applicable codes.

b. Television Set Enclosures (Typically Levels II and III only) -

Television sets should not be mounted on walls using exposed brackets because of the ligature risk this presents. Rather, all TV sets should be installed in built-in TV or media centers or manufactured tamper-resistant covers with sloped tops.[290] Some facilities prefer to also have an isolation switch that staff can control. For maximum safety, the electrical outlet and cable TV outlet should be located inside the cover to keep the wires and cables away from patients.

#290a

4. Furnishings

The health care organization should select furniture appropriate for the patient population served and the location on the unit for which it is intended. Care should be taken to realize that it is not uncommon for unauthorized movement of furniture from a low-level risk area to a higher risk area of a unit to occur. This may result in unintended risks being created.

#480b

a. Seating - Closed arms and legs on furniture that is weighted or is securely fixed in position may be preferred when consistent with the Safety Risk Assessment. High quality plastic chairs for use at tables may be acceptable. Lounge chairs with upholstery[482] that resemble typical residential furniture and meet the criteria above are generally preferred.

#482a

b. Tables[485] are suggested to <u>not</u> have individual legs at the corners and be weighted or anchored in place to resist being thrown or stacked.

c. Bookcases and Cabinets - Same as Baseline.

#485a

6. Plumbing Fixtures and Fittings

a. Toilet Fixtures - Not permitted in Level III areas

b. Sinks – Standard stainless-steel sinks may be permitted if that is consistent with the organization's Safety Risk Assessment, but caution is recommended.

c. Showers - Level IV and V only

d. Faucets - Standard gooseneck faucets and standard valve handles may be permitted if that is consistent with the organization's Safety Risk Assessment, but caution is recommended. In Level III areas consideration is suggested to locating these sinks behind lockable doors or roll-down shutters that are closed and secured when staff are not present.

e. Flush Valves - Level IV and V only

f. Medical Gases - Level IV and V only

g. Diffusers, Registers and Grilles - Standard grilles are <u>not</u> recommended in Level III areas. Grilles with "S" shaped vanes[600] are preferred.

E. Level IV

Areas where patients spend a great deal of time alone with minimal or no supervision:

Level IV-a. Patient Rooms

Architect winning design competition: HDR, Omaha, NE - Photographer: VA Photo, Scott R. Snell

All items shall be the same as Baseline with the following exceptions:

1. Openings

a. Doors:

i. **Patient Room Doors** continue to be one of the most frequently used items in suicide attempts in these facilities. This is verified in ***TJC***'s "Incidence and Method of Suicide" study dated July 2018.

Barricade resistant strategies discussed in the Baseline section are strongly suggested to be used in these locations.

ii. **Abuse -** These doors also frequently receive abuse and use of the more durable synthetic faced doors[25] in these locations will help retain their appearance.


#25a

b. Door Hardware:

i. **Handles** on lock-sets are especially important on these doors. Careful consideration of the risks involved in compliance with the Safety Risk Assessment is strongly suggested.

ii. **Hinges** need to be carefully coordinated with the barricade resistant solution selected and over-door-alarm system, if provided. These need to be thought of as an assembly, not separate parts that can be put together in any combination.


#150a

iii. **Over-the-door alarms**[150] are strongly suggested for patient room to corridor doors. Since the building and life safety codes require these doors to be tight-fitting for smoke and other reasons, the top of these doors is one of the attachment points most frequently used in suicide attempts. The bottom of doors can also present a risk if the gator roll technique is attempted. One product will detect this also.

iv. **Locks** - Some facilities have begun to address the desire of some patients to lock themselves in their rooms to avoid unwanted entrance by other patients. The challenges with this are to provide individual security for the patient without restricting staff access to the room. Options include lock-sets with specialized locking functions and ligature-resistant turnpieces[140] that cannot be held from inside the door to resist a key being turned to unlock the door. A cylinder protector[141] to cover the lock cylinder on the corridor side of the door resists attempts to insert objects in the key-way. Card access technology is also available to control these locks.

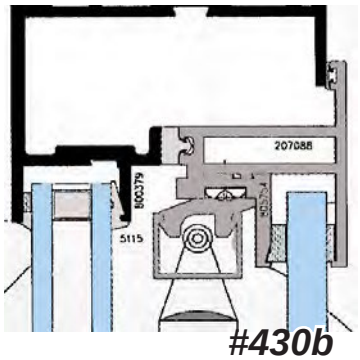
#140

c. Windows:

– Advances in different types of safety glass make it worthwhile to consult an expert for advice for a specific project. The height above the ground, patient population, and many other factors should be taken into account in choosing these materials. Comply with the FGI Guidelines and all applicable codes and regulations for glazing, frame installation and operable sash.


#141a

If replacing windows presents a prohibitive cost in remodeling work, a security screen with a very sturdy steel frame[80] designed to resist deflection and equipped with multiple key locks and a heavy-gauge stainless steel screen fabric[81] may be used. These are functional and secure but create an "institutional" appearance and can be defaced by writing obscene words with toothpaste (or other material). Patients have also been known to use the rough surface of the screen fabric to abrade their skin



#430b

i. **Exterior Windows** - Mini- blinds[430] or roller blinds[440] behind safety glazing is strongly suggested for these rooms. Ligature resistant control of the blinds can either be by staff only or by both patients and staff as indicated by the Safety Risk Assessment.

ii. **Interior Windows** – The provision of view windows between patient rooms and corridors is usually discouraged for patient privacy reasons. The use of windows (either in doors or walls) as a method of performing routine patient checks at night is discouraged because it is often very difficult to observe the patient sufficiently. If these windows are provided, it is strongly suggested that they have either mini-blinds[220] between Security glass or glass that can be made opaque electrically.[221] Either type of control is preferred to be by staff only to restrict patients' ability to peek in on other patients.

#220c

iii. **Operable Windows** – These are not usually required in patient rooms but may be provided if desired by using products that reduce the risk of elopement and passing of contraband[434] (if on the ground floor).


#434a

d. **Glazing –** Security glazing[200] is strongly suggested for these rooms.

e. **Window Coverings –** See Baseline

2. Finishes

a. **Walls –** Impact and/or abrasion-resistant gypsum board[230] installed on minimum 20-gauge metal studs spaced no more than 16 inches on center; paint finish preferred. Sound-

attenuating gypsum board[232] may also be used on walls if approved by the manufacturer for use in behavioral health applications.

b. Ceilings – ***The FGI Guidelines*** currently require "monolithic" ceilings in all patient bedrooms, bathrooms, bathing facilities and seclusion rooms. Their definition of this term virtually requires the use of solid gypsum board[230, 232] ceilings.

#30b

These monolithic ceilings are suggested to have key-lockable access panels[30] that fit tightly to their frames. Larger sizes of these panels, may require tamper-resistant screws in the corners or along the sides of the panels. Pick-resistant caulk may be needed if the flanges of these panels do not fit tightly to the ceiling or wall surface.

Other tamper-resistant systems[239] discussed in Baseline section do not appear to meet this definition.

c. Wall Base - See Baseline

d. Flooring – See Baseline: If some patients are prone to urinate on the floor, provide some rooms with seamless epoxy[250] or sheet vinyl flooring with an integral cove base. Metal or plastic strips should not be applied at the top edge of the base. Use of a system that eliminates the need for trim strips[250c] is recommended.

e. Special Wall Surfacing – Wall protection panels[320] are sometimes used in these areas, but the use of plastic or metal trim strips are strongly discouraged.

3. Specialties

a. Cubicle Curtains and Tracks – These are not recommended for use in behavioral health facilities because of the risk they present. If non-ambulatory patients with co-existing medical conditions are being treated on these units, it is recommended they be assigned to single-patient rooms.

4. Furnishings

a. Seating:

i. **Desk chairs** are preferred to be lightweight[481] or ballasted[480] as discussed in Baseline Considerations.

ii. **Stools**[479] that are specially designed for use in behavioral health units are also available.

#480b

b. Furniture:

i. **Sturdy wood, thermoplastic, or composite furniture should be bolted to the floor or walls whenever possible.** Care must be taken to assure the furniture will withstand abuse, will not provide opportunities for hiding contraband, does not have joints that will allow penetration of liquids such as urine, and will resist being dissembled to provide patients with weapons.

#479a

Open-front units with fixed shelves and no doors or drawers[495] are recommended. Doors should not be provided because they can be used by patients as ligature attachment points. Drawers should not be provided because they can be removed by patients and broken to use as weapons. All upholstery and foam used in furniture and mattresses should have flame-spread ratings that comply with the requirements of NFPA 101: *Life Safety Code*, Section 10.3.

#495

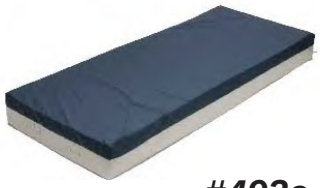
ii. **Beds**

- **Non-Adjustable Platform Beds**[493] – Beds without wire springs or storage drawers are preferred. These beds should be securely anchored in place to prevent patients from using them to barricade the door. If a portable lifting device will be used, beds are available with an opening underneath to accommodate the legs of the lift.[494] Portable lifts can also be accommodated by placing an existing platform bed on a specially designed riser; this arrangement also reduces the amount of bending over staff need to do to work with the patient.[494b]

#493f

- **Mattresses for Platform Beds**[492] – These should be specifically designed for use in behavioral health facilities and be resistant to abuse and contamination.

- **Bedding**[491] - If bedding other than standard sheets are indicated by the Safety Risk Assessment for some patients, one piece durable products are available,



#492e

- **Electric Hospital Beds** – If electrically operable beds are needed for patients with co-existing medical issues or to reduce risk of staff injuries, beds that are specifically marketed for use on behavioral health units[490] should be used rather than standard electrically adjustable hospital beds. These specialty beds will sense obstructions and reverse direction and have lockout features for the controls, reduced-length cords, and other tamper-resistant features. However, they do have significant ligature attachment point risks with the guard rails, headboard, foot board and allow access to many hazards beneath the bed.

#491a

- **If existing electrically operable beds** must be used for financial reasons, use only beds that require a constant pressure on a switch located on the bed rail (not a remote-control device or paddle that can be placed on the floor). Also, provide a key lockout switch[611] on the beds (or a removable pigtail) so only staff can operate the beds. All electrical cords should be secured and shortened. These beds also have significant ligature attachment risks as mentioned above.

#490d

- As for **other wheeled beds**, the wheels of electric hospital-type beds should be removed or rendered inoperable. It is further suggested that corridor doors to rooms with electrically operable beds be locked at all time the patient is not in the room to reduce the risk of other patients entering the room and harming themselves.

iii. Wardrobes – Wardrobe units should not have doors and should have fixed (non-adjustable) shelves.[496] They should be securely anchored in place and have sloped tops. Wardrobes with clothes poles requiring hangers are discouraged because, although the bar can be made safe, the hangers present serious hazards. The ***FGI Guidelines*** no longer call for patient rooms to have accommodations for “hanging full-length clothing.” The average length of stay in many facilities is now in the

#496

7-to-10-day range, and patients seldom come with clothing that needs to be hung up. The use of clothes hangers is not recommended.

iv. **Cabinets (Built-in) –** if provided, these are strongly suggested to have no doors or drawers and any shelves be securely anchored in place to resist both upward and downward force.

- One exception to not having cabinet doors may be cabinets to hold CPAP machines[496c] in some patient rooms if allowable by the facility's Safety Risk Assessment. These have a slot to allow the tubing to exit the cabinet. Care is suggested in locating these and consideration of other patients who may have access to the tubing. It is suggested that if these are provided they be equipped with concealed hinges, key operated locks, ligature resistant pulls and be designed so the doors resist ligature attachment when closed and locked. The electrical receptacle to operate the machine is strongly suggested to be located inside this cabinet.

496c

6. Plumbing Fixtures and Fittings

a. Toilet Fixtures - Levels IVb and Vb only

b. Sinks – Hand washing sinks are not required in Psychiatric Hospital patient rooms by the FGI Guidelines but toilet rooms are required to have sinks by the FGI Guidelines and are covered in Level IVb.

c. Showers - Levels IVb and V only

d. Faucets - Levels IVb and V only

e. Flush Valves - Levels IVb and V only

f. Water Stations – Levels II and III only

g. Medical Gases – These are not normally required for behavioral health units. If there is medical necessity or the outlets are a preexisting condition in remodeling projects, they are suggested to be covered with lockable panels[590c] as listed in Baseline above or panels attached with tamper-resistant screws. These covers should be

removed or opened only to address the medical needs of the current patient and replaced when that patient is discharged or moved. Special care must be taken in semi-private rooms to assure that access to the medical gases does not present a safety risk to the other patient. Some manufacturers offer lockable covers for outlets. Cabinets that are large enough to enclose the devices attached to the outlets[590b] are preferred.

#590b

7. HVAC

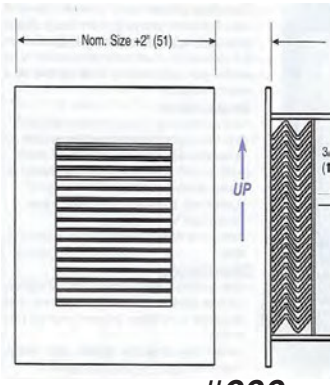
a. Diffusers, Registers and Grilles:

i. **Fully recessed vandal-resistant grilles** with S-shaped air passageways[600] are recommended for all ceiling and wall-mounted grilles. Perforated air grilles are not suggested for Level IV areas.

#590c

ii. **HVAC Equipment** - In new construction or major remodeling projects, locate individual room HVAC equipment (such as fan/coil units) in an adjacent corridor or another location (e.g., an interstitial space) where they can be serviced without entering the patient room.

iii. **HVAC Equipment** - If individual fan/coil-type units exist and must remain, they should be protected with vandal-resistant covers[606] the same as for corridors in all other Levels.



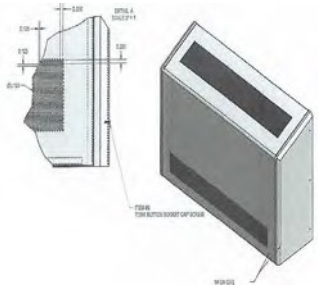
#600a

b. Thermostats – See Baseline and as called for in the Safety Risk Assessment.

8. Electrical

a. Electrical Devices:

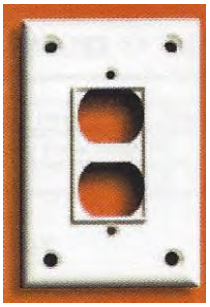
i. **New construction or major remodeling** - the ***FGI Guidelines*** require a dedicated circuit be provided for all electrical outlets in each patient room and bath. This will allow power to the outlets in a specific room to be turned off if necessary for a patient's safety. Control of each circuit should be located where only staff have access. Where this is not practical in an existing facility,



#606

a tamper-resistant temporary cover may be installed when necessary.

ii. **All electrical switch and outlet cover plates** should be as discussed in Section A - Baseline Conditions.



#612c

b. Light Fixtures –

i. **Standard Fixture** - The standard general hospital practice of providing a 2'x4' light fixture directly over patient beds is seldom needed in behavioral health facilities because medical treatment is not provided in the patient beds and looking up into one is not very pleasant.

ii. **LED Fixture** - The current preference is for using either wall or ceiling mounted narrow strip LED fixtures.[620d] An alternative can be round or oval vandal-resistant fixtures[620k] for general illumination. Many of these fixtures are now available with LED light sources and some are tunable to allow patients or staff to change the color or the light.

#620h

iii. **Downlight** - Any downlights are suggested to have polycarbonate lenses.[620h]

iv. **Small individual reading lights**[624] can be provided to give reading light near beds or adjacent to built-in bench seating areas or allow patients to turn on a small light to assist when getting up in the middle of the night.

#624

v. **Night Lights**[539] – are required by the ***FGI Guidelines*** in patient rooms and these are to be controlled from a location near the door to the room.

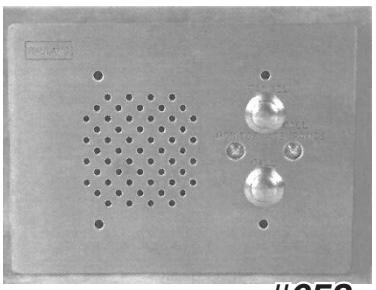
#639a

9. Communications

a. Telephone Sets are not typically provided in behavioral health patient rooms.

b. Nurse Calls are not required in behavioral health patient rooms by the FGI Guidelines; however if they are provided, they are required to meet their standards and are suggested to have flush mounted push button activation.[653]

If cords are provided, it is recommended they be no longer than 6" and as lightweight as possible.



#653

Level IV-b. En-suite Patient Toilet Rooms:

Architect of Record - Davis Partnership, Denver,CO: Photographer - Paul Brokering Photography

All items shall be the same as Baseline with the following exceptions:

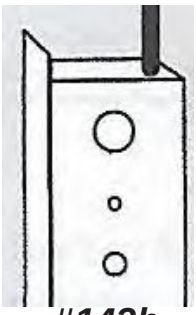
1. Openings

a. Doors & Hardware - The first question to address for patient toilet room doors is whether the facility ever has the need/desire to lock patients out of their bathrooms.

#113c

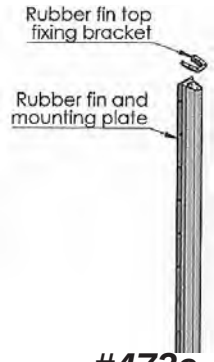
i. Locking - If there is a need to lock patients out of the bathroom:

- **Double-acting Hinge** - A full-size, tight fitting, out-swinging door mounted on a double-acting continuous hinge[113c] with cap and over-door alarm[150] is preferred. Also, a classroom function deadbolt that extends the bolt into the head of the door frame (with a ligature-resistant turn piece on the inside that will retract the bolt but not extend it[143b]), two flush pulls[121] mounted back to back (larger pulls[121d] available for ADA accessible rooms), and a roller,[147] ball[146] or magnetic[148] latch at the head should be installed along with a rubber fin with top fixing bracket[473e] mounted on the strike side of the frame.



#143b

- **A sliding door**[40g] that is ligature resistant can eliminate issues with swinging door conflicts or floor space issues as long as there is wall surface for it to slide over in the open position. Ligature resistant pulls and locking hardware are available for this configuration. A frame assembly is now available for this system to assist with installation on existing openings.



#473e

ii. Non-Locking - If it is not necessary to lock patients out of their bathrooms, one of the following options may be provided:

- **Non-lockable doors** eliminate many of the hanging hazards associated with a typical door. Some attach with magnets[470a] (*illustrated on next page*) and may be easily removed by staff for use as a shield against an attacking patient.

- **Door assemblies with sloped tops**[473c], continuous hinges and rubber fins at the strike jamb and ligature resistant pulls are another option.

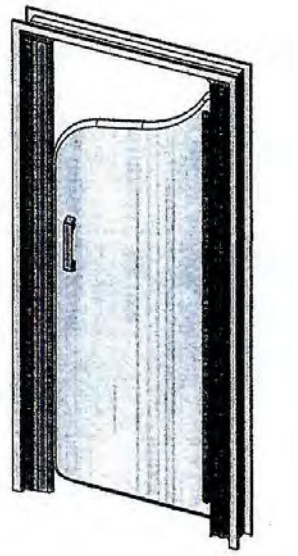
#40g

- **No Door** - Some facilities with single-patient rooms are electing to remove doors entirely from patient toilet rooms. The practicality of this depends on not having a clear sight line into the toilet room from the corridor door. This has proven to be unpopular with patients in some facilities due to the lack of privacy.

#470a

iii. **Shower Openings - Doors** – No shower curtains or their tracks of any type (including those designated as "breakaway" and represented by their manufacturers as "safe for psychiatric hospitals") are recommended for use in any patient-accessible areas, especially patient showers. In new construction, showers could be designed to contain the spray within the compartment without the use of a curtain or door. The use of foam doors[470a] or hard plastic doors[473c] mounted with a minimal gap between the bottom of the door and the floor may be used to reduce the amount of water that leaves the shower compartment.

The use of residential glass shower doors is specifically discouraged.



#473c

2. Finishes

a. Walls – The following are suggested depending on the acuity of the patient population and the project budget:

i. **Synthetic wall protection panels**[331] (without trim pieces) or solid-surface sheet material

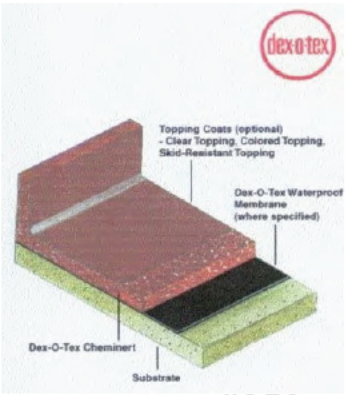
ii. **Ceramic or porcelain tile** in large pieces

iii. **Gypsum board** that is impact-resistant and has mold and moisture-resistant facing[230] with epoxy paint; solid-surface sheets in showers.

b. Ceiling – Gypsum board with mold- and moisture-resistant facing[230] with epoxy paint is recommended.

c. Wall Base – See Baseline

d. Flooring – One of the following slip-resistant products may be used depending on the acuity of the patient population and the Safety Risk Assessment :

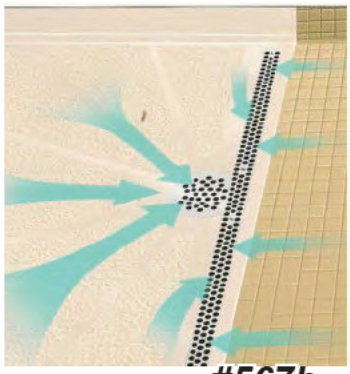


#250a

i. **Seamless Epoxy Flooring**[250] – This flooring should have a slip-resistant finish and integral cove base and can be used in a shower. Do not use a metal or plastic strip at the top of the base as patients can remove it for use as a weapon.

ii. **Ceramic and Porcelain Tile** - Larger tiles may be used (to reduce the number of joints) as long as the installation is maintained in good condition.

iii. **One-Piece Floor Units** – These units[564] provide a monolithic floor (European-style) for the entire patient toilet room that drains the shower to a central location. If used in conjunction with location of the shower enclosure and shower head, this unit can eliminate the need for shower curtains.


#567b

iv. **Solid-Surface Material Basins** – These are available with a trench drain[567] across the entire front opening of the stall, which not only helps keep water from getting into the room, but also makes the drain more difficult for patients to intentionally clog. Fiberglass shower stalls and floors are generally not durable enough.

v. **Prefabricated Bathrooms**[568] – These contain all finishes, fixtures, and accessories and can reduce construction time because they are shipped to the site ready to be connected to the utilities. Care must be taken for use of durable materials.


#568a

3. Specialties

a. Toilet Accessories –

i. **Robe Hooks** – Evaluate the risk of using these hooks. If they are required, they should be the collapsible type.[350]


#350e

ii. **Towel Bars** – Use collapsible hooks[350] instead of towel bars for towels.

iii. **Grab Bars** – Because some patients may be on medications that interfere with their equilibrium, grab bars for toilets and showers are recommended for all patient-

accessible toilets. A self-draining bar[332] may be installed on a slight slope. These provide a high degree of safety and are also easy to clean and sanitize. If the wall surface behind the bar is not smooth and flat, provide pick-resistant sealant to the joint between the bar and the wall.


#332b

iv. **Vertical Grab Bars** – In locations where vertical grab bars are required or desired, typical ligature-resistant bars mounted vertically can usually be grasped only from one side. A ligature-resistant grab bar specifically designed to be mounted vertically[337] that can be grasped from either side is available.


#337

v. **Soap Dishes** - These should not have handles and should be recessed. Soap dishes that can be installed from the front [390a] should be provided unless there is access to the chase behind the wall for installation

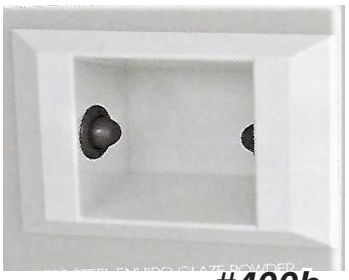

#390a

vi. **Soap Dispensers** – Many facilities now use liquid or foam soap in patient areas, but the commonly used hard-plastic soap dispensers are problematic in that they are fairly easy to pull off the wall and break into sharp shards that can be used as weapons. At least one manufacturer now offers steel covers for their standard dispensers. Another solution is a dispenser made of solid-surface material[391] commonly used for counter tops that is relatively tamper-resistant. Some commercially available stainless steel dispensers are reasonably ligature-resistant.

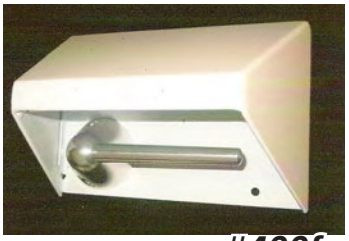
#391b

vii. **Toilet Paper Holders:**

- **Toilet paper holders**[400] that do not require a bar or tube to hold the paper allow for standard use of the roll of toilet paper without requiring everyone using the roll to handle it. They are available in recessed and surface mounted styles and some have no moving parts.


#400b

- **Other toilet paper holders** use a bar(s) that pivot down[400f,g] when vertical pressure is imposed.


#400f

viii. **Shelves** – Shelves to hold miscellaneous items are often requested in shower stalls and near wall-hung lavatories. A stainless-steel suicide-resistant shelf that

is either surface-mounted[371] or recessed into the wall[, 370] may be considered for these applications. Front mounted recessed units are preferred unless access to the chase is provided.


#370a

ix. **Paper Towel Dispensers** – Paper towel dispensers are a concern in patient-accessible toilets because they typically are constructed of light-weight materials that can either be broken or bent to form sharp objects that may be used as weapons. Alternatives are as follows:

- Place a small stack of paper towels on a surface-mounted or recessed shelf.
- Provide a heavy-gauge, vandal-resistant dispenser.[340b]
- Install a heavy-duty secure cover[340a] over a standard-weight paper towel dispenser.
- Install a polycarbonate, vandal-resistant dispenser.[340c]


#340b

b. Mirrors – There are several options now available.

i. Glass-laminated polycarbonate mirrors in ligature resistant wood frames offer an option with a residential appearance and are scratch resistant. (See also A.3.e.i)


#340a

ii. Polycarbonate mirrors with built-in lighting are attractive and non-institutional but are susceptible to scratching.

iii. Typical radiused stainless steel-framed security mirrors[360] are available with polycarbonate, tempered glass, stainless steel, or chrome-plated steel reflective surfaces. Each has different durability and distortion characteristics. Some framed mirrors have a flat surface on top which may be a ligature attachment point.


#360a

6. Plumbing Fixtures and Fittings

a. Toilet Fixtures - Toilets used by behavioral health patients should be a floor-mounted, back water supply type rather than a wall-mounted fixture, which can be broken off its hangers and may present a ligature attachment risk. These type fixtures are available in china, stainless steel and solid surface material. Where wall-hung toilets or floor


#531a

mounted fixtures that do not fit tightly to the wall exist and replacing them is not practical, some facilities have had stainless steel or solid surface filler panels custom fabricated to fill the voids.

#534b

i. **Movable seats** provide attachment points for ligatures, so their use should be considered carefully by each hospital. The solution is to use a fixture with an integral seat as suggested above[534b]**.** Some facilities feel this is too prison-like and choose to accept the risk of the movable seat. At the present time, TJC is allowing movable toilet sets in behavioral health facilities.

#533

ii. **China fixtures** themselves (both floor- and wall-mounted) can be broken into large, sharp shards. Toilet fixtures made of solid-surface material[533] and stainless steel[534] are available and are much more resistant to breakage. The stainless steel fixtures can be powder-coated for a less “institutional” appearance.

#536

iii. **Bariatric -** Toilet fixtures that manufacturers claim will support loads in excess of 2,000 pounds are available if needed for patients of size.[536]

b. Sinks:

i. **Solid Surface -** Typical commercial solid-surface counter tops with integral sinks offer a much less institutional appearance. They also provide a place for patients to set their toothbrushes, etc. Specialty vanity top-type lavatories[542] provide many of the same benefits.

ii. **Wall-Hung Solid-Surface Lavatories** – Corner lavatories[540] make ligature attachment difficult and some come with the ADA required 18” space from the wall to the centerline of the drain and matching pipe enclosure.

#540a

iii. If a **wall-hung fixture** is used that does not fit into a corner,[541] the optional filler panel is recommended to fill the space between the side of the fixture and an adjacent wall when there is one near the fixture. Stainless steel or high-impact polymer pipe covers designed for the lavatories that fit tightly to the bottom of the fixture should also be provided.

#541a

iv. **Lavatory Waste and Supply Piping** – All piping of this type must be enclosed so it is not accessible to patients.[410] Extreme care should be taken to trim the

enclosing material so it fits tightly to the underside of the lavatory fixture to prevent the patient from using this space to hide contraband.

#410a

c. Showers:

i. **Shower Heads** – These should be a ligature-resistant institutional type.[550] ADA Handicapped-accessible showers are required to have either a hand-held shower head or a second, lower head 48" above the floor. The hand-held shower head should be on a ligature-resistant, quick-disconnect fitting[563b] that allows removal of the head and attached hose when not in use. If a hook is provided to hold the hand-held shower head, it should be mounted on the part of the fitting that is removed when the hose is removed. A ligature resistant shower head with integral quick-disconnect fitting and internal diverter valve[553a] is available which reduces the clutter of individual items. Another option is to provide a lockable cabinet to house the hand-held head and valve.[562]

#563a

ii. **Shower Control Valves** - *Note:* Provide thermostatically limited hot water to prevent accidental or intentional scalding in all patient-accessible sinks and showers.

- **Single-knob mixing valves** that provide minimal opportunity for tying anything around them are preferred.[552] These give patients control of the water temperature and duration of flow. Some of these are claimed to be ADA-compliant by their manufacturers.

#552b

- If it is only necessary to **replace the valve handles** and the valve itself is working properly, use of a replacement valve handle[552c] that can be adapted to a variety of valves might be considered. *Note:* This may void any remaining warranty on the existing valve.

- A "**no-touch" valve**[552e] that appears to be ADA compliant is available. It utilizes infrared controls to give patients control of a range of water temperatures and the duration of flow.

- **One-piece shower assemblies** that contain shower heads, valves, and a recessed soap dishes[560] work well for remodeling projects because they reduce the amount of repair needed for wall finishes. These

#560c

are also available with a second head[563c] located 48" above the floor and a diverter valve if needed for ADA purposes.

iii. **Shower Drains –** That offer less opportunity for ligature attachment or patients abrading their skin[565] are preferred over more traditional drain grates.

#565c

iv. **Diverter Valve** – If a diverter valve is needed to change the water flow from the standard shower head to the ADA-required head, a ligature-resistant diverter valve[555] may be provided.

#570

d. Faucets - Lavatory and Sink Faucets and Valves – Faucets and valves can provide attachment points for ligatures. A lavatory valve unit is now available that uses a shower valve fitted with a ligature-resistant handle[574] to allow patients to control the temperature (thermostatically limited to prevent scalding) and duration of the water flow. This valve can be used to replace the motion sensor activation of some faucets. Faucets are available in a variety of materials and configurations that range from push-button to motion sensor-activated.[570] Faucets with two push buttons allow patients some choice of water temperature and do not require electricity (either battery or line voltage) to operate. They also will not automatically turn on unexpectedly, which is disturbing to some patients.

#581b

e. Flush Valves – Toilet flush valves that are recessed in the wall[580] and activated by a push button[581] are preferred. Where this is not practical, the flush valve and all related pipes should be enclosed with a stainless steel[585] or plastic[585b] cover with a sloped top that incorporates a push-button activator for the valve. Sensor activation of flush valves is discouraged because they require electricity (either battery or line voltage) and may flush unexpectedly which can be disturbing to some patients.

#585a

7. HVAC

a. Air Grilles – Perforated air grilles are not suggested for Level IV areas. Grilles with "S" vanes are preferred. See Section A Baseline Conditions.

8. Electrical

a. Electrical Devices:

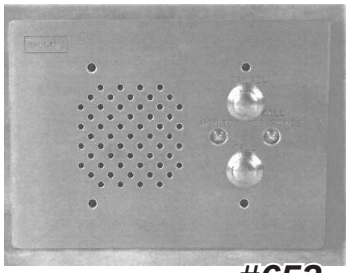
i. In new construction or major remodeling, the ***FGI Guidelines*** require a dedicated circuit be provided for all electrical outlets in each patient room and bath. This will allow power to the outlets in a specific room to be turned off if necessary for a patient's safety. Control of each circuit should be located where only staff have access. Where this is not practical in an existing facility, a tamper-resistant temporary cover may be installed when necessary.

ii. **All electrical switch and outlet cover plates** should be as discussed in Baseline.

b. Light Fixtures – These fixtures require wet condition rating and are otherwise the same as Baseline.

9. Communications

a. Nurse Calls – These are not required by the ***FGI Guidelines***, but if they are provided, they must meet general hospital standards. In addition, flush mounted push-button activation is preferred.[653] In areas where falls may occur, it is recommended that a second push button located about 12" above the floor be provided below the one at normal mounting height. If pull cord activators are provided, the ***FGI Guidelines*** limit their length to a maximum of 6 inches in length.



#653

F. Level V:

Areas where staff interact with newly admitted patients who present potential unknown risks or where patients may be in highly agitated condition, such as Admissions, and Seclusion/Restraint Suites:

Level V-a. Admissions:

Architect of Record - Davis Partnership, Denver,CO: Photographer - Paul Brokering Photography

All items shall be the same as Level IV with the following exceptions:

If possible, the admissions function is preferred to not take place on an inpatient unit. At admission, unit staff members know very little about a new patient and his or her trigger points. A separate location for admission avoids disrupting either the unit or the new patient due to the agitation of either.

The Admission rooms should be pleasant, calming, quiet and welcoming; and should be minimally furnished (with a few loose pieces of furniture).

The room should be large enough to allow for several staff to physically manage the patient if necessary. If possible, the admitting staff member should not be in the room alone with a patient. After the admitting process is complete, the patient can be escorted to the unit. These precautions are particularly important for emergency admissions, which frequently occur at night and on weekends.

1. Openings

a. Doors - As stated above, all rooms patients will enter are suggested to have a barricade-resistant solution as discussed in Baseline.

b. Windows:

i. Exterior – If exterior windows are present, they are suggested to comply with comments for Level IV above.

ii. Interior - Provide a small (12”x12” or 4”x24”) view window in the door that can be controlled by staff[220] from outside the room to observe what is happening in the room when necessary and resist non-authorized individuals having visual access to the room.

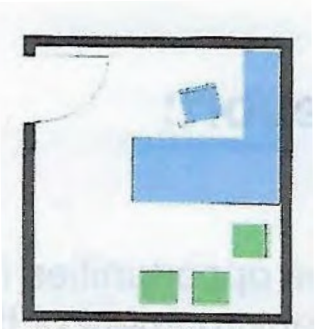


Diagram #1

4. Furnishings

a. Cabinets (Built-in) - Same as discussed in Baseline.

b. Seating –

i. The furniture arrangement is suggested to locate the patient’s and family member’s chair(s) so that when they are seated, they will not be between the staff member and the door to the room.

Chairs[482] are preferred to be comfortable and fixed in place or heavyweight as discussed in Section A Baseline Concepts.

#482

ii. Desk Seating for staff[480] is suggested to be a lightweight plastic chair in lieu of a standard desk chair which could be used as a weapon.

b. Furniture:

i. If a built-in desk or table is provided, it is preferred to be sturdy and firmly attached to the floor or walls and contain a lockable file drawer for forms and a lockable box drawer for pens, pencils, staplers, etc. All loose items should be kept in drawers and out of sight.

#480b

ii. The use of laptop or tablet computers in these rooms is preferable to minimize cords and wires that patents may

be able to access. If desktop computers are provided, they are suggested to be located so the patient cannot easily reach them.

8. Electrical

a. Light Fixtures – Dimmable wall or ceiling washing light fixtures are suggested so that lower levels (and possibly more soothing color temperatures) are available to provide a less stimulating environment. See Baseline

9. Communications

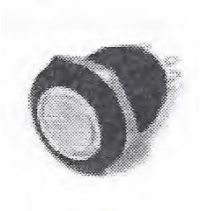
a. Telephone Sets – are suggested to be cordless phones to reduce the number of wires that may be available to patients. If standard telephones are provided, it is suggested that they be located as far away from patients as possible or in lockable cabinets.

#650f

b. Nurse Calls / Duress Alarms If a personal duress alarm system[650] is not present, an emergency call button[654] for use by staff is strongly suggested to be provided so staff may summon additional staff members if necessary.

10. Electronic Safety

a. Metal Detectors[660] – may be provided in the Admissions area to assist with screening incoming patients for contraband. See Baseline


#654

Level V-b. Seclusion Suites and Restraint Suites

All items shall be the same as Level IV with the following exceptions:

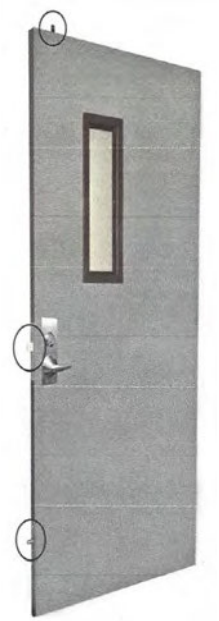
Seclusion Rooms and Restraint Rooms are very similar in design and construction with the size and furniture being the two main differentiating features. The ***FGI Guidelines*** require Seclusion Rooms to be a minimum of 60 square feet in floor area and Restraint rooms to be a minimum of 80 square feet in floor area. They should be no less than 7 feet wide and no greater than 11 feet long to avoid providing enough space for a patient to get a running start at the opposite wall. They should be designed to minimize blind spots where patients cannot be observed by staff without entering the room and outside corners are to be avoided, where possible. A minimum ceiling height of 9 feet is preferred.

It is strongly suggested that one room not be used for both secluding and restraining patients unless the loops for attaching the restraint straps are removed before the room is used for secluding a patient. The Safety Risk Assessment should address all aspects of seclusion and restraint in detail.

The distance of the seclusion room from the nurse station needs to be considered. The goal is to avoid excessive distance so staff can be readily available as needed. The seclusion room door should swing out of the room and open directly into an anteroom to separate these activities from other patients and give the patient access to a toilet without entering the corridor

1. Openings

a. Doors - Heavy-duty, commercial-grade steel doors with a minimum clear width of 3'-8" (usually requires nominal 4'-0" wide doors) that are hinged to swing out of the room. A polycarbonate[201] view window that does not exceed 100 square inches is strongly suggested to allow staff to observe the patient and determine the location of the patient before opening the door. The height of the window should allow shorter staff members to see into the room.



#160d

b. Door Hardware:

i. **Exposed door hardware** is typically not provided on the inside face of these doors.

ii. **The seclusion room door i**s preferred to have three-point latching with *manual activation of a single lever* required to engage all three bolts.[160] This operation greatly reduces the risk of a staff becoming locked in the room with a patient. Hardware that automatically latches when the door is closed and latched can result in staff being locked in the room with the patient.

c. Windows:

i. **Exterior** – If exterior windows are present, they are suggested to be a minimum of ½" thick polycarbonate and have either mini-blinds or roller blinds that have motorized operation controllable from the Ante Room.

ii. **Interior** – See comments on view window in the door above. Other interior windows in these rooms are discouraged to help avoid over-stimulation of patients.

#270a

2. Finishes

a. Walls:

i. **Padded wall finish** is often provided which has either a Kevlar-facing or heavy vinyl facing and 1 1/2" thick foam backing.[270]

ii. **Unpadded** - Impact-resistant gypsum board[230] over 3/4" plywood (or 25 gauge sheet metal which stiffens the wall, is easily cut and does not require wider door frames) on minimum 20-gauge metal studs at 16" on center with high performance finish[280] are minimum recommendations.

b. Ceilings – Impact-resistant and/or abrasion-resistant gypsum board[230, 231] painted with high performance finish[280] at 9'-0" minimum height is preferred.

c. Wall Base:

i. **Unpadded –** Use of a separate base material is not recommended in these rooms. If painted, exposed gypsum board finish is provided; it is preferred that it be extended to the floor and a pick-resistant caulk joint be provided at the floor. A painted stripe that is 4" or 6" high may be provided to help hide scuffing and marking on the wall.

ii. **Padded** – No base is typically provided, the padding extends to the top of the flooring.

d. Flooring – Provide continuous sheet vinyl with foam backing and heat-welded seams[272] or padded flooring to match wall padding.

3. Specialties

a. Mirrors and Domes – Observation Mirror – Install a convex mirror[420] at the ceiling in the corner of the room opposite the seclusion room door. Make sure the mirror can be seen when viewing it from the window in the door. This mirror will give staff a full view of the room prior to opening the door. Care shall be taken to assure the attachment is secure so the patient cannot remove it and have a weapon and the perimeter is sealed with pick-resistant caulk.

4. Furnishings

No furniture is typically provided in Seclusion rooms and Restraint Rooms other than the following:

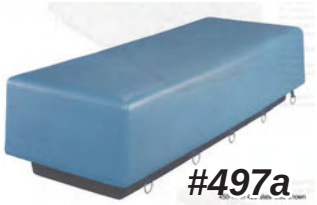
a. Furniture:

i. **Seclusion rooms** are suggested to have only a behavioral health care mattress[492] on the floor or a special seclusion room bed.[493a] These beds should not have

#492

#493a

exposed loops to which mechanical restraints may be attached because these may be used as ligature attachment points for secluded patients.



#497a

ii. **Restraint rooms** are suggested to have special beds with loops for attachment of restraint straps.[497] These beds are typically anchored in place and positioned to allow space for access on at least three sides, if not all four sides.

iii. **Seclusion and Restraint Room** - If a room will be used for patients that are both in restraints and in seclusion (without restraints), there are several beds available that have restraint attachment loops that may be quickly and easily removed.[498]

#498a

5. Fire Suppression

a. **Fire Sprinkler Heads -** Institutional Type – Same as for Level IV.

6. Plumbing Fixtures and Fittings

a. **Same as those in Level IV-B** except that toilet fixtures of Powder-coated stainless-steel fixtures[534] or solid surface material[533] are preferred by some facilities.

NOTE: All plumbing fixtures intended for use by patients in this area are required by the FGI Guidelines to be in a separate room that is accessed via an Ante Room from the Seclusion/Restraint Room.

7. HVAC

a. **Diffusers, Registers and Grilles HVAC grilles -** Fully recessed, vandal-resistant grilles with S-shaped air passageways[600]

b. **Thermostats –** These are preferred to be a digital type with control mounted on the wall in the anteroom and sensor in the return air duct serving the room.

8. Electrical

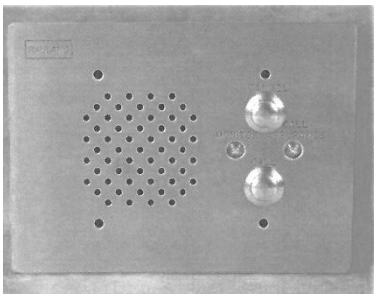
a. Electrical Devices. No electrical outlets, switches, thermostats, blank cover plates, or similar devices are permitted by the FGI Guidelines inside seclusion rooms.

b. Light Fixtures. Light Fixtures – Fully recessed, moisture-resistant, vandal-resistant light fixtures[620i] installed in the ceiling are recommended. Dimmable wall or ceiling washing light fixtures are suggested so that lower levels (and possibly more soothing colors) are available to provide a less stimulating environment.

9. Communications

a. Telephone Sets - None allowed.

b. Nurse Calls / Duress Alarms – None allowed, it is typical that a staff member is assigned to continuously observe the patient in these rooms. A staff assist call button[653] mounted in the Anteroom may be required by the FGI Guidelines



#653

Summary

Thoughtful consideration of these design elements and materials by design team members and hospital staff can result in a very aesthetically pleasing environment that will enhance the treatment process and help maximize safety for patients, staff, and visitors. It is strongly recommended that wall-hung lavatories, 2'x4' fluorescent light fixtures, paddle-handle door hardware, and many other items typically found in general hospitals **NOT** be used in behavioral health facilities. The reasons these are used in general hospitals typically do not exist in behavioral health care units. Their elimination will significantly reduce the institutional character of behavioral health facilities without decreasing patient or staff safety.

As stated in the introduction, this document is intended to represent leading current practices and does not establish minimum standards for behavioral health facilities or represent requirements of codes or regulatory agencies. No product or built environment is entirely without risk.

The authors' desire is that hospital staff and their design teams will use this information to start conversations about what is the best solution for each individual facility's patients and staff.

The Baseline level of concern in *Section A* is intended to represent a typical level of risk tolerance for inpatient units. This baseline is adjusted up or down for the levels of concern in the environmental safety risk assessment matrix as discussed herein.

Appendix Index

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

01 00 00 – General

01 00 01 – Trash Receptacle Liner

1a. Trash receptacle liner – paper
Sani-liner®
Wisconsin Converting
Green Bay, WI
920-593-8297
www.wisconsinconverting.com


#1a

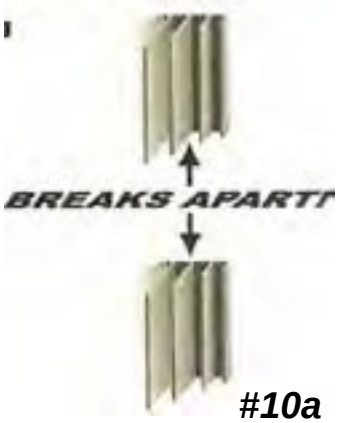
1c. Trash receptacle liner – paper
Psych-Select-Bag™
Dano Group
Stamford, CT
800-348-3266
www.danoinc.com


#1c

07 00 00 – Thermal and Moisture Protection

07 92 00 – Joint Sealants

10a. Sound and Smoke Seals – Breakaway
Cush'N'Seal w/breakaway anti-ligature option
Door and Hardware Systems, Inc.
Rochester, NY
585-235-8543
www.dhsi-seal.com



#10a

10b. Sound and smoke seals – breakaway
Ligature-resistant Zag option
Zero International – Allegion
Indianapolis, IN
877-671-7011
www.zerointernational.com

10c. Sound and smoke/fire seals – breakaway
Adhesive gaskets - perforated
Pemko Manufacturing Company
Memphis, TN
800-824-3018
www.pemko.com


#10b

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

20a. Pick-resistant caulk
DynaflexTM SC
Pecora Corporation
Harleysville, PA
800-523-6688
www.pecora.com

20b. Pick-resistant caulk
Everseal # SB-190
Surebond
St. Charles. IL 60174
877-843-1818
www.surebond.com


#20b

20c. Pick-resistant caulk
MasterSeal® #CR 190
BASF Construction Chemicals
Shakopee, MN 55379
800-243-6739
www.master-builders-solutions.basf.us

08 00 00 - OPENINGS

08 10 00 – Doors and Frames

25a. Synthetic faced door
Acrovyn® Doors
Construction Specialties
Lebanon, NJ 08833
800-972-7214
www.c-sgroup.com


#25a

25b. Synthetic-faced door-
Thermal-Fused Doors
ASSA ABLOY Door Group
c/o Maiman
Springfield. MO 65803
417-616-8234
www.assaabloywooddoors.com


#25b

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

08 31 13 – Access Doors

30.a Access panel – lockable

SP Steel Security Panel with mortise deadbolt prep

J. L. Industries, Inc.
Bloomington, MN 55435
800-554-6077
www.jlindustries.com

30.b Access panel – lockable

Security Access Panel with tamper resistant latches & rounded corners

Weizel Security
800-308-3627
www.securinghospitals.com

08 34 00 – Special Function Doors

40a. Patient toilet door

Wanford En-Suite Bathroom Door

Safehinge-Primera
UK
0330-058-0988
www.safehingeprimera.com

40b. Patient toilet door

En-Suite Patient Bathroom Door w/ Shower Door Option: #SHDUS02

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com
NOTE: Hinge only, see Item 111g; Rubber fin only, see item 473e

40c. Patient Toilet Door

Ligature Resistant Sliding Door System with Frame

Accurate Lock and Hardware
Stamford, CT 06902
203-348-8865
www.accuratelockandhardware.com


#40c

40d. Patient toilet door

Sentinel Event Reduction Door

Norva Plastics, Inc.
Norfolk, VA 23508
800-826-0758
www.norvaplastics.com


#40d

40e. Patient toilet door

Soft Suicide Prevention Door

Kennon Products, Inc.
Sheridan, WY 82801
307-674-6498
www.suicideproofing.com


#40e

40f. Patient toilet door

SafeDoor

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com

44b. Wicket doors

Acrovyn® Barrier-Resistant Doors

Construction Specialties
Lebanon, NJ 08833
800-972-7214
www.c-sgroup.com


#44b

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

44c. Wicket doors

Behavioral Health Series Patient Room Access Door

ASSA ABLOY Door Security Solutions
New Haven, CT 06511
800-377-3948
www.assaabloydss.com


#44c

44d. Wicket doors

Wicket Door (Wood Doors)

Marshfield Door Systems
Marshfield, WI 54449
800-869-3667
www.marshfielddoors.com

44e. Wicket doors

GCD-EC Flush Wicket Door with structural composite lumber core

Graham Wood Door
Mason City, Iowa 50401
641-423-2444
www.grahamdoors.com


#47a

47a. Security sidelight

Security Sidelite Unit

Curries Company
Mason City, IA 50401
641-423-1334
www.curries.com

47b. Security sidelight

Security SideLite Unit

Ceco Door
Milan, TN 38358
www.cecodoor.com


#47b

08 51 13 – Aluminum Windows

60a. Aluminum window with integral blind

2450 Series Storefront with hinged sash and integral blind

Manko Window Systems, Inc.
Manhattan, KS 66502
800-642-1488
www.mankowindows.com

#60a

60b. Aluminum window with integral blind

2187-DT Psychiatric Windows with integral blind

Wausau Window and Wall Systems
Wausau, WI 54401
877-678-2983
www.wausauwindow.com

#60b

60c. Aluminum window with integral blind - removable

SS-5100 Medium-Security Mental Health Security Window

Sherwood Windows Group
Toronto, Ontario M9W 5E3
Canada
800-770-5256
www.sherwoodwindows.com

#61a

61a. Exterior windows - ventilation

Safevent Windows

Britplas
Woolston, Warrington WA1 4RW
England
+44-1925-824317
www.britplas.com

61b. Exterior windows - ventilation

SW-6300 Operable Security Window

Sherwood Windows Group
Toronto, Ontario M9W 5E3
Canada
800-770-5256
www.sherwoodwindows.com

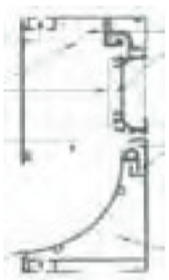
#61b

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

61c. Exterior windows - ventilation

512 Ventrow Ventilator

Kawneer North America
Norcross, GA 30092
770-449-5555
www.kawneer.com



08 56 56 – Security Window Screens

80. Security screens

Security Screens

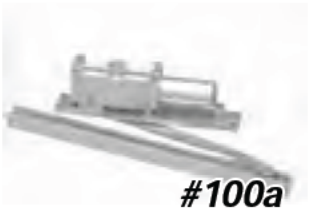
Kane Innovations
Erie, PA 16506
800-773-2439
www.kanescreens.com

08 71 00 – Door Hardware

100a. Door closer

Concealed closer #2010 Series

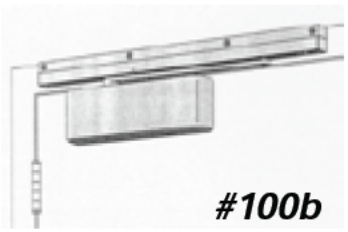
LCN
Princeton, IL 61356-0100
877-671-7011
us.allegion.com/brands/lcn/Pages/default.aspx



100b. Door closer

High-security track closer #4510T SMOOTHEE® Series

LCN
121 West Railroad Avenue
Princeton, IL 61356-0100
877-671-7011
us.allegion.com/brands/lcn/Pages/default.aspx



101. Electrically controlled door closer

Fire/Life Safety Series HSA Sentronic Electrically Controlled Closer/Holder

LCN
P.O. Box 100
Princeton, IL. 61356-0100
815-875-3111
us.allegion.com/brands/lcn/Pages/default.aspx

#101

109. Electric-release concealed deadbolts

ELECTRATM concealed vertical rod latching lever locksets

Securitech Group, Inc.
Maspeth, NY 11378
800-622-5625
www.securitech.com

#110

110. Electromagnetic lock

Electromagnetic Locks

DynaLock Corporation
Bristol, CT 06010
877-396-2562
www.dynalock.com

#111a

111a. Continuous hinges – gear type with hospital tip

780-Series Roton Hinges

Hager Companies
St. Louis, MO 63104
800-325-9995
www.hagerco.com/Product-Listing.aspx?CatID=152&SubCatID=189

111b. Continuous hinges – gear type with hospital tip

112HD Concealed Continuous Hinge

Ives
Indianapolis, IN 46219
877-671-7011
us.allegion.com

#111b

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

111c. Continuous hinges – gear type with hospital tip

825-S22 SR™SR824-S22 SafeSupport Continuous Gear Hinge

Weizel Security
800-308-3627
www.securinghospitals.com

111e. Continuous hinges – gear type with hospital tip

Continuous Geared Hinge # KG200

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

#111e

111f. Continuous Hinges – gear type with hospital tip

SL11 Concealed single acting continuous geared hinge

Select Products Limited
Portage MI 49024
800-423-1174
www.selecthinges.com

#111f

111g. Continuous hinges

Anti-Ligature Continuous Swing Hinge for Shower w/ Cap# KG203

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

113a. Double-acting continuous hinge

Double Swing Hinge #DSH1000 Barrel Type

Markar
Memphis, TN 38181
www.assaabloydooraccessories.us/en/local/assaabloydooraccessoriesus/products/hinges/continuous-pin-barrel-hinges/behavioral-health-hinges/

#113a

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

113c. Double-acting continuous hinge

Swing Hinge # KG202

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

113d. Double-acting continuous hinge

Switch Hinge # KG280

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

115b. Emergency stop

Emergency Release Stop #ERS

Pemko Manufacturing Company
Memphis, TN 38141
800-824-3018
www.pemko.com

115c. Emergency stop

Swing Stop # KG205, KG206

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

120. Door pull

Vandal-Resistant Door Pull Trim # VR910-DT

Ives
Indianapolis, IN 46219
877-671-7011
us.allegion.com

121c. Door pull, recessed

Heavy Duty Security Flush Pull # D89

Rockwood Manufacturing Company
Rockwood, PA 15557
800-458-2424
www.rockwoodmfg.com

#121c

121d. Door pull, recessed

Heavy Duty ADA Security Flush Pull # BF97L

Rockwood Manufacturing Company
Rockwood, PA 15557
800-458-2424
www.rockwoodmfg.com

#121d

130a. Ligature-resistant lever handle lockset

Anti Ligature Lockset (Mortise and Cylindrical) #SPSL

Best Access Systems
Indianapolis, IN 46250
317-849-2250
www.bestaccess.com/index.php/products/behavioral-health-products/

#130a

130b. Ligature-resistant lever handle lockset

Schlage L Series Extra Heavy Duty Mortise Lock with ligature resistant lever

Allegion
877-671-7011
us.allegion.com/IRSTDocs/Brochure/106510.pdf

#130b

130c. Ligature-resistant lever handle lockset

Series 5SS19 Institutional Life Safety Mortise Locksets - Levers

Marks USA
Amityville, NY 11701
800-526-0233
www.marksusa.com

#130c

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

130d. Ligature-resistant lever handle lockset
LSL Life Safety Lever Series
Grainger
Lake Forest, IL 60045
800-472-4643
www.grainger.com


#130d

131a. Ligature-resistant modified lever handle lockset
8200 with BHW Trim
Sargent Manufacturing Company
100 Sargent Drive
New Haven, CT 06536-0915
800-727-5477
www.sargentlock.com


#131a

131b. Ligature-resistant modified lever handle lockset
Crescent Handle – horizontal installation
Accurate Lock and Hardware
Stamford, CT 06902
203-348-8865
www.accuratelockandhardware.com


#131b

131c. Ligature-resistant modified lever handle lockset
Securitech; Solis handle available for both mortise and cylindrical locksets)
Securitech Group, Inc.
Maspeth, NY 11378
800-622-5625
www.securitech.com/securiguard/


#131c

131d. Ligature-resistant modified lever handle lockset
HD Ligature Resistant Cylindrical Lock CH-CYL Series
Accurate Lock and Hardware
Stamford, CT 06902
203-348-8865
www.accuratelockandhardware.com


#131d

132a. Ligature-resistant lockset

Ligature Resistant Push/Pull 9125ALP

Accurate Lock and Hardware
Stamford, CT 06902
203-348-8865
www.accuratelockandhardware.com

#132a

140. Patient room privacy lockset

Patient Room Privacy Lockset

Best Access Systems
Indianapolis, IN 46250
800-392-5209
www.bestaccess.com/products/behavioral-health-products/

141a. Cylinder protector

Securiguard Cylinder Protector; Model #63LR

Securitech Group, Inc.
Maspeth, NY 11378
800-622-5625
www.securitech.com/securiguard/

141b. Cylinder protector

ShieldX Cylinder Protector

Grainger
Lake Forest, IL 60045
800-472-4643
www.grainger.com

143a. Deadbolt

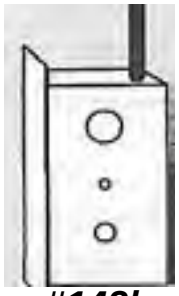
Deadbolt with ligature-resistant turn piece (retract bolt only) #PBL102-630

Securitech Group, Inc.
Maspeth, NY 11378
800-622-5625
www.securitech.com

143b. Deadbolt

Vertical Deadbolt with ligature-resist. turn piece (retract bolt only) #52XXV-F17

Securitech Group, Inc.
Maspeth, NY 11378
800-622-5625
www.securitech.com



144. Sallyport interlock hardware

RACHIE™ series lockset package

Securitech Group, Inc.
Maspeth, NY 11378
800-622-5625
www.securitech.com

145. Remote authorization

Assa Cliq Remote Authorization System

Assa Abloy
www.assaboly.com

146. Ball catch
Dual Adjustable Ball Catch #347
Ives
Indianapolis, IN 46219
877-671-7011
us.allegion.com


#146

147. Roller latch
Roller Latch # RL30
Ives
Indianapolis, IN 46219
877-671-7011
us.allegion.com


#147

148. Magnetic latch
Super-Mite Heavy Duty Magnetic Catch #327
Ives
Indianapolis, IN 46219
877-671-7011
us.allegion.com


#148

150a. Over-door alarm
The Door Switch
St. Louis, MO 63146
877-998-5625
thedoorswitch.com


#150a

150b. Over-door alarm
Top Door Alarm®
Door Control Services, Inc.
Ben Wheeler, TX 75754
800-356-2025
www.doorcontrolservices.com

#150b

150c. Over-door alarm

SEDA Door Alarm

Best Access Solutions, Inc.
Indianapolis, IN 46250
www.bestaccess.com/products/behavioral-health-products/

150d. Over-door alarm

LISA-Kit (Life Safety Alarm)

Grainger
Lake Forest, IL 60045
800-472-4643
www.grainger.com

150d. Over-door alarm

DAISY – Over-the-Door Alarm)

Securitech Group, Inc.
Maspeth, NY 11378
800-622-5625
www.securitech.com

160a. Seclusion room door locks

Seclusion Room Lock (surface mount)

Securitech
Maspeth, NY 11378
800-622-5625
www.securitech.com

160b. Seclusion room door locks

Multi-Point Deadbolt Mortise Lock - UML Series (concealed mount)

Securitech
Maspeth, NY 11378
800-622-5625
www.securitech.com

160c. Seclusion room door locks

Schlage; Multipoint Solution # LM9300

Ingersoll Rand Security Technologies
Carmel, IN 46032 US
877-671-7011
us.allegion.com/IRSTDocuments1/104833.pdf

#160c

160d. Seclusion room door locks

Multi-Bolt Self-Latching Concealed Locksets (USL Series)

Securitech
Maspeth, NY 11378
800-622-5625
www.securitech.com

#160d

161. Cross-corridor door locks

Electra Concealed Vertical Rod Latching Lever Locksets #109

Securitech
Maspeth, NY 11378
800-622-5625
www.securitech.com

#161

162. Elopement buffer or sallyport door locks

RACHIE Entry & Exit Control Systems

Securitech
Maspeth, NY 11378
800-622-5625
www.securitech.com

#162

175a. Wall Stops

KG184 Anti-Ligature Rubber Wall Stop

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

#175a

175b. Wall Stops

KG270-278 Anti-Ligature Extended Rubber Wall Stop

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

#175b

08 87 53 – Security Films

190a. Window film

Scotchshield™ – 14 mil Film with Perimeter Attachment System

3M Specified Construction Products Department
St. Paul, MN 55144
888-364-3577
www.3m.com

190b. Window film

200 Series – Safety and Security Laminate

ACE (Advanced Coatings Engineering)
Newark, DE 19713
888-607-0000
www.usace.com

08 88 53 – Security Glazing

200a. Security glazing

121000 or 121100 ArmorProtect Plus®

Oldcastle Building Envelope®
Dallas, TX 75244
866-653-2278
www.obe.com

200b. Security glazing

9/16Psych-2118

Global Security Glazing
Selma, AL 36703
(800) 633-2513
www.security-glazing.com

(NOTE: meets ASTM F1233 Class 1.4)

#200b

200c. Security glazing
Laminated Annealed Glass w/ SGP Interlayer
Global Security Glazing
Selma, AL 36703
(800) 633-2513
www.security-glazing.com

201a. Polycarbonate sheet glazing – abrasion-resistant
MR10 LEXAN - MARGARD II Sheet
SABIC Americas
Pittsfield, MA 01201
800-323-3783
www.sabic.com

201b. Polycarbonate sheet glazing
Makrolon® GP Sheet
Covestro LLC
Pittsburgh, PA 15205-9723
877-229-3778
www.sheets.covestro.com

205a. Fire-rated glazing
Fireglass; FireLite ®
Technical Glass Products (TGP) (Allegion)
800-426-0279
www.fireglass.com

205b. Fire-rated glazing
Fireglass; WireLite ® - NT
Technical Glass Products (TGP) (Allegion)
800-426-0279
www.fireglass.com

220a. Vision panels

Vision panels, key operation

VISTAMATIC®
Coral Springs, FL 33065
866-466-9525
www.vistamaticvisionpanels.com


#220a

220b. Vision panels

Duralux Secure Privacy Vision Panel

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com


#220b

220c. Vision panels

ViuLite manual or motorized blinds inside glass panels

Unicel Architectural Corp.
Longueuil, Quebec, Canada J4G 2J4
800-668-1580
www.unicelarchitectural.com


#220c

220d. Vision panels

Between Glass Blinds vision panels

VISTAMATIC, LLC
Coral Springs, FL 33065
866-466-9525
www.betweenglassblinds.com


#220d

220e. Vision panels

IE; Blinds® sealed, integral blind assemblies

IE Blinds
Ben Wheeler, TX 75754
866-267-1917
www.ieblinds.com

221a. Vision panels

Clarity Privacy Glass (electric)

VISTAMATIC®
Coral Springs, FL 33065
866-466-9525
www.vistamaticvisionpanels.com

221b. Vision Panels

Duralux Platinum Switchable Vision Panel (electric)

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

09 00 00 – Finishes

09 21 16 – Gypsum Board

230a. Impact-resistant gypsum board

Sheetrock® Brand engineered gypsum panels – abuse-resistant

USG Corporation
Chicago, IL 60661
800-874-4968
www.usg.com

230b. Impact-resistant wallboard

Gold Bond® Brand Hi-Impact® XP® Gypsum Board – moisture- and fire-resistant also has abrasion resistant paper face

National Gypsum Company
Charlotte, NC 28211
704-365-7300
www.nationalgypsum.com

230c. Impact-resistant wallboard

Extreme Impact Resistant Type X Gypsum Board

CertainTeed Corporation
Melvern, PA 19355
800-233-8990
www.certainteed.com

231a. Abrasion-resistant wallboard

Gold Bond® Brand Hi-Abuse® XP® Gypsum Board

National Gypsum Company
Charlotte, NC 28211
704-365-7300
www.nationalgypsum.com

231b. Abrasion-resistant wallboard

Extreme Abuse Resistant Type X Gypsum Board

CertainTeed Corporation
Melvern, PA 19355
800-233-8990
www.certainteed.com

232a. Sound-absorbing wallboard

QuietRock sound-reducing panels

PABCO® Gypsum
Newark, CA 94560
800-797-8159
www.quietrock.com

232b. Sound-absorbing wallboard

Silent FX Quick Cut Noise Reducing Type X Gypsum Board

CertainTeed Corporation
Melvern, PA 19355
800-233-8990
www.certainteed.com

232c. Sound Attenuation wallboard

Gold Bond® Soundboard® XP® Gypsum Board

National Gypsum Company
Charlotte, NC 28211
704-365-7300
www.nationalgypsum.com

09 50 00 – Ceilings

234a. Ceiling Accessories

MBAC – Main Beam Adapter Clip for attaching gyp. bd. to ceiling grid

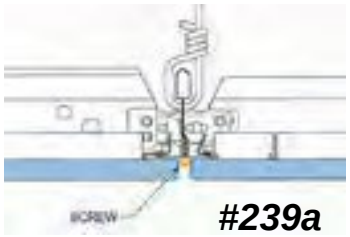
Armstrong Ceiling Solutions
www.armstrongceilings.com

#234a

239a. Tamper-resistant ceiling panels

Metal Works; Vector

Armstrong Ceiling Solutions
877-276-7876
www.armstrongceilings.com

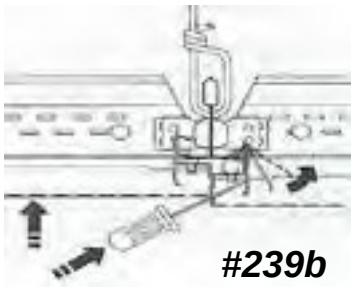


#239a

239b. Tamper-resistant ceiling panels

Metal Works; Clip-On

Armstrong Ceiling Solutions
877-276-7876
www.armstrongceilings.com



#239b

09 65 13 – Resilient Base

240. Wall base

Health Design™ Wall Base

FLEXCO® Corporation
Tuscumbia. AL 35674
800-633-3151
www.flexcofloors.com

241a. Wall base

Visuelle Wall Base

Roppe Corporation, USA
Fostoria, OH 44830
800-537-9527
www.roppe.com

241b. Wall base

Johnsonite "Millwork" Contours Wall Base – PV4065

Tarkett
30000 Aurora Road
Solon, OH 44139
800-899-8916
www.tarkettna.com

09 65 16 – Resilient Flooring

245a. Sheet vinyl flooring

Homogeneous Vinyl Sheet Flooring

Armstrong Flooring, Inc.
Lancaster, PA 17604
888-276-7876
www.armstrong.com

245b. Sheet vinyl flooring

Noraplan sheet flooring

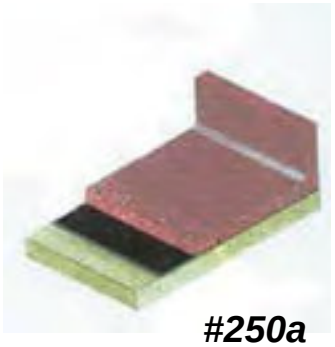
nora® systems, Inc.
Salem, NH 03079
800-332-NORA
www.nora.com/us

09 67 00 – Fluid-Applied Flooring

250a. Seamless floors and base

Cheminert K flooring

Dex-O-Tex
Division of Crossfield Products Corp.
Roselle Park, NJ 07204
908-245-2800
www.dexotex.com



250b. Seamless floors and base

Seamless flooring systems
Dur-A-Flex, Inc.
East Hartford, CT 06108
877-2 51-5418
www.dur-a-flex.com

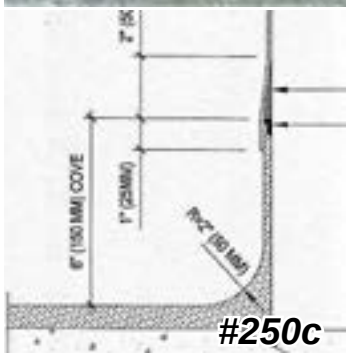

#250b

250c. Seamless floors and base
Sika Corp.; Sikafloor – no top edge trim at integral base
Sika Corporation
Lyndhurst, NJ 07071
800-933-7452
www.sikafloorusa.com


#250c

09 68 16 – Sheet Carpeting

255. Carpet
Mohawk Group GL 182 Exotic Fauna Sheet Carpet with Unibond Plus Bloc backing
Mohawk Group
Calhoun, GA 30701
800-554-6637
www.Mohawkgroup.com



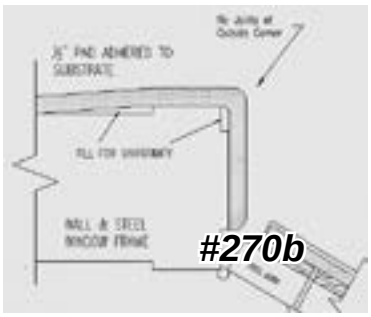
#250c

09 77 00 – Special Wall Surfacing

270a. Wall padding
Gold Medal Safety Padding®
Marathon Engineering Corporation
Lehigh Acres, FL 33913
239-303-7378
goldmedalsafetypadding.com


#270a

270b. Wall padding
Surface padding systems
Padded Surfaces by B&E
Indianapolis, IN 46241
888-243-8788
paddedsurfaces.com


#270b

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

272. Seclusion room wall and floor material

Lonfloor Plain – smooth

Lonseal, Inc.
Carson, CA 90745
800-832-7111
www.lonseal.com

09 96 13 – Abrasion Resistant Coatings

280. Wall finish (do not use on floors)

Sto; Decocoat®

Sto Americas
Building 1400, Suite 120
Atlanta, GA 30331
800-221-2397
www.stocorp.com

10 00 00 – SPECIALTIES

10 12 00 – Display Cases

290a. TV enclosure – suicide-resistant

TE450 Ligature-Resistant Protective TV Enclosure

Behavioral Safety Products
Watkinsville, GA 30677
706-705-1500
www.besafepro.com

#290a

290b. TV Enclosure – suicide resistant

Protective Enclosures, FPE55F(H)-S

Peerless A-V
Aurora, IL 60502
800-865-2112
www.perlessmounts.com

#290b

290c. TV enclosure – suicide-resistant

Ligature-resistant TV enclosure

ProEnc
Jersey City, NJ 07302
862-234-5981
www.lcdtvenclosure.com

#290c

10 14 00 – Signage

300a. Room signs

FIxsigns

2/90 Sign Systems
Grand Rapids, MI 49512
800-777-4310
www.290signs.com

#300a

300b. Room signs

Secure + spec

Creative Signage Systems, Inc.
College Park, MD 20740
800-220-7446
www.creativesignage.com

#300b

300c. Room signs

KING KMS® Modular Sign System

King Architectural Products
Bolton, ON, Canada, L7E 2R6
877-857-2804
www.kingarchitecturalproducts.com

#300c

300d. Room signs

Safecare Signs

2/90 Sign Systems
Grand Rapids, MI 49512
800-777-4310
www.290signs.com

#300d

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

10 26 16.16 – Protective Corridor Handrails

310a. Corridor handrail

Acrovyn® ligature-resistant handrail with continuous aluminum mounting bracket

Construction Specialties
Muncy, PA 17756
800-233-8493
www.c-sgroup.com

#310a

10 26 23 – Protective Wall Covering

320a. Synthetic wall protection

Avonite® Acrylic products - Wall Protection

Avonite
Belen, NM 87002
800-4-AVONITE
www.avonitesurfaces.com

320b. Synthetic wall protection

Acrovyn by Design® Wall Protection

Construction Specialties
Muncy, PA 17756
800-233-8493
www.c-sgroup.com

#320

320c. Synthetic wall protection

Ricochet Flexible Wall Protection

Inpro Corporation
Muskego, WI 53150
800-222-5556
inprocorp.com

#320c

10 28 13 – Security Toilet Accessories

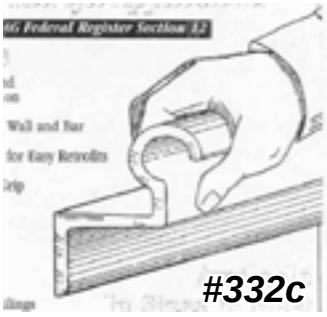
332a. Grab bar
Anti-Ligature Grab Bar KG270-278
Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com


#332a

332b. Grab bar
Ligature - Resistant Grab Bar #GB730
Behavioral Safety Products
Watkinsville, GA 30677
706-705-1500
www.besafepro.com


#332b

332c. Grab bar
SAFEBAR® grab bar
Cascade Specialty Hardware, Inc.
Vancouver, WA 98660
360-823-3995
www.cascadesh.com


#332c

332d. Grab bar
SafeSupport® Safe-T Grab Bar #811-S01
Weizel Security
800-308-3627
www.securinghospitals.com


#332d

332e. Grab bar
NW SecurityBar®
Northwest Specialty Hardware, Inc.
Clackamas, OR 97015
503-557-1881
www.northwestsh.com


#332e

337. Grab bar – vertical

SP-3V Vertical Grab Bar

Odd Ball Industries
Greenlawn, NY 11740
631-754-0400
www.oddballindustries.com

Cross Section #337

Finished End #337

340. Paper towel dispenser

Paper Towel Dispenser Cover #817-S45 SR™

Weizel Security
800-308-3627
www.securinghospitals.com

#340

340b. Paper towel dispenser

Paper Towel Dispenser # KG02

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

#340b

340c. Paper Towel Dispenser

Ligature - Resistant Paper Towel Dispenser #PH240

Behavioral Safety Products
Watkinsville, GA 30677
706-705-1500
www.besafepro.com

#340c

341. Roll Paper Towel Dispenser

Roll Paper Towel Dispenser #WH1848B

Whitehall Manufacturing
City of Industry, CA 91744
1-800-782-7706
www.whitehallmfg.com

#341

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

350a. Robe hook – break-away

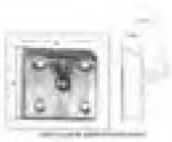
Robe/Towel Hook # SP6

Odd Ball Industries Mfg. Co., Inc.
Greenlawn, NY 11740
1-631-754-0400
www.oddballindustries.com

350b. Robe hook – break-away

SafeSupport SR Collapsible Towel Hook # SR813-S08

Weizel Security
800-308-3627
www.securinghospitals.com



#350b

350d. Robe hook – break-away

Clothes Hook #NW 608

Northwest Specialty Hardware, Inc.
Clackamas, OR 97015
503-557-1881
www.northwestsh.com

#350d

350e. Robe hook – breakaway

Coat Hook # KG180

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

360a. Security Mirrors

Hybrid Safety Mirror in Guardian Frame

RAO Contract Sales, Inc.
392 Atwood Place
Wyckoff, NJ 07481
800-445-7065
www.rao.com

#360a

360b. Security Mirrors

ROVAL™ stainless steel mirror #20650-B

American Specialties, Inc.
Yonkers, NY 10701
914-476-9000
www.americanspecialties.com

#360b

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360c. Security Mirrors

Security mirror #JOC-161

McGrory Glass, Inc.
Paulsboro, NJ 08066
856-579-3200
www.mcgrory-glass.com

360d. Security Mirrors

Sole - Illuminated Mirror for High Abuse Applications

Visa Lighting
Milwaukee, WI 53209
800-788-84272
www.visalighting.com


#360d

361a. Mirror guard

Mirror Guard # SP-8

Odd Ball Industries
Greenlawn, NY 11740
631-754-0400
www.oddballindustries.com


#361a

370a. Recessed shelf

Ligature-Resistant Recessed Shelf (front mount through flange) # RS780

Behavioral Safety Products
Watkinsville, GA 30677
706-705-1500
www.besafepro.com

370b. Recessed Shelf

Ligature-Resistant Recessed Shelf (front mount through flange) #KG12

Kingsway Group USA
2807 Samoset Road, Suite 200
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com


#370b

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

370c. Recessed shelf

BestCare® Recessed Shelf (front mount through flange) # WH1820FA

Whitehall Manufacturing
City of Industry, CA 91744-0527
800-782-7706
www.whitehallmfg.com

#370c

370d. Recessed shelf

Recessed Shelf (front mount through side) # Model 412

American Specialties, Inc.
Yonkers, NY 10701
914-476-9000
www.americanspecialties.com


#370d

371c. Shelf – surface-mounted

Bookshelf # SA56

Bradley Corporation
Menomonee Falls, WI 53051
800-272-3539
www.bradleycorp.com


371c

380a. Shower seat

ADA Shower Seat

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com


#380a

380b. Shower seat

ADA Shower Seat

Brey-Krause Manufacturing Co.
Bethlehem, PA 18018
610-867-1401
www.breykrause.com


#380b

390a. Soap Dish

Bestcare Bathroom Accessory Solutions #WH1832-PF (front mount with plaster flange)

Whitehall Manufacturing
City of Industry, CA 91744
1-800-782-7706
www.whitehallmfg.com


#390a

390b. Soap dish

Norix Group Inc.; Recessed Soap Dish (rear mount)

Norix Group, Inc.
West Chicago, IL 60185
1-800-234-4900
www.norix.com


#390b

391a. Soap dispenser

KG08 Manual Soap Dispenser – Gojo Compatible

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com


#391a

391b. Soap dispenser

ADX-12TM Security Enclosure

GOJO Industries, Inc.
Akron, OH 44309
800-321-9647
www.gojo.com

#391b

391c. Soap dispenser

Suicide Prevention Soap Dispenser

Norva Plastics, Inc.
Norfolk, VA 23508
800-826-0758
www.norvaplastics.com

#391c

391d. Soap dispenser

Ligature Resistant Soap Dispenser #SD750

Behavioral Safety Products
Watkinsville, GA 30677
706-705-1500
www.besafepro.com

#391d

400a. Toilet paper holder

Toilet Roll Holder # KG13

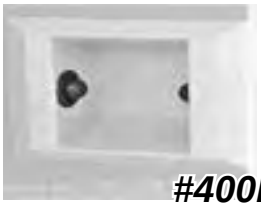
Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

#400a

400b. Toilet paper holder

Toilet Roll Holder #WH1847B Series (Recessed model (1845B) also available)

Whitehall Manufacturing
City of Industry, CA 91744
1-800-782-7706
www.whitehallmfg.com



#400b

400c Toilet paper holder

Surface Mount Toilet Roll Holder # KG03

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com


#400c

400d Toilet paper holder

Ligature Resistant Toilet Paper Holder #TR740

Behavioral Safety Products
Watkinsville, GA 30677
706-705-1500
www.besafepro.com


#400d

400f. Toilet paper holder

Safety Toilet Paper Holder #C-400

Cascade Specialty Hardware, Inc.
Vancouver, WA 98660
360-823-3995
www.cascadesh.com


#400f

400h. Toilet paper holder

Suicide-Resistant Toilet Paper Dispenser

Norva Plastics, Inc.
Norfolk, VA 23508
800-826-0758
www.norvaplastics.com


#400h

410a. Undersink protection

Truebro® Lav Shield®

IPS® Corporation
Compton, CA 90220
310-898-3300
www.truebro.com

410b. Undersink protection

Undersink Enclosure #831-S27 SRTM

Weizel Security
800-308-3627
www.securinghospitals.com


#410a

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10 86 00 – Security Mirrors and Domes

420a. Convex mirrors

DuraVision Quarter Dome Mirror

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com


#420a

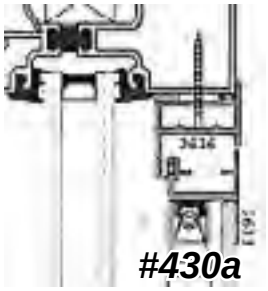
12 00 00 – FURNISHINGS

12 21 13 – Horizontal Louver Blinds

430a. Aluminum window with integral blind

Storefront with hinged sash and integral blind #2450 Series

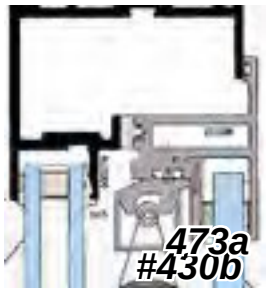
Manko Window Systems, Inc.
Manhattan, KS 66502
800-642-1488
www.mankowindows.com


#430a

430b. Aluminum window with integral blind

Psychiatric Windows with integral blind #2187-DT

Wausau Window and Wall Systems
Wausau, WI 54401
877-678-2983
www.wausauwindow.com


473a
#430b

430c. Aluminum window with integral blind - removable

Medium-Security Mental Health Security Window # SS-5100

Sherwood Windows Group
Toronto, Ontario M9W 5E3
Canada
800-770- 5256
www.sherwoodwindows.com


#430c

434a. Exterior windows - ventilation

Safevent Windows

Britplas
Woolston, Warrington WA1 4RW
England
+44-1925-824317
www.britplas.com


#434a

434b. Exterior windows - ventilation

Operable Security Window # SW-6300

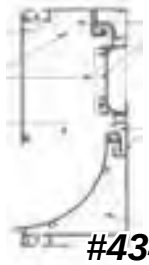
Sherwood Windows Group
Toronto, Ontario M9W 5E3
Canada
800-770-5256
www.sherwoodwindows.com


#434b

434c. Exterior windows - ventilation

512 Ventrow Ventilator

Kawneer North America
Norcross, GA 30092
770-449-5555
www.kawneer.com


#434c

12 21 33 – Roll-Down Blinds

440a. Roller blinds

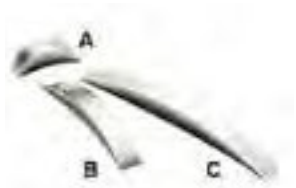
Webb Lok cordless roller shades

Inpro
Muskego, WI 53150
800-222-5556
https://www.inprocorp.com/clickeze-privacy-systems/specialty-window-shades


#440a

12 35 70 – Healthcare Case Work

460a. Cabinet pulls
Cabinet Pull # DP74C
Doug Mockett & Company, Inc.
Torrance, CA 90501
800-523-1269
www.mockett.com



#460a

460b. Cabinet pulls
Zinc Handle – polished chrome finish #104.66.200
Hafele America Co.
Archdale, NC 27263
800-423-3531
www.hafele.com/us/en


#460b

460c. Cabinet pulls
Arc Cabinet Pull #DP18
Doug Mockett & Company, Inc.
Torrance, CA 90501
800-523-1269
www.mockett.com


#460c

465a. Cabinet locks – keyless
eLock®: Cabinet version #300 Series
CompX Security Products
847-752-2500
www.compxelock.com


#465a

465b. Cabinet locks – keyless
dialock
Hafele America Co.
800-423-3531
www.hafele.com/us/en

465c. Cabinet locks – keyless
eLock: Cabinet Version #100 Series
CompX Security Products
Mauldin, SC 29662
864-297-6655
www.compxelock.com


#465b

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

470a. Tamper-resistant screws

Socket Security & Torx Security

Tamperproof Screw Company, Inc.
Hicksville, NY 11801
516-931-1616
www.tamperproof.com

#470a

470b. Tamper-resistant screws

Security Pin Torx Screws and Bits

Northwest Specialty Hardware, Inc.
Clackamas, OR 97015
503-557-1881
www.northwestsh.com

#470b

12 44 16 – Shower Doors

473a. Shower doors

Wanford ShowerDoor

Safehinge-Primera
UK
0330-058-0988
www.safehingeprimera.com

#470a

473b. Shower doors

En-Suite Patient Bathroom Door w/ Shower Door Option: #SHDUS02

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

#473b

473c. Shower doors

Sentinel Event Reduction Shower Door

Norva Plastics, Inc.
Norfolk, VA 23508
800-826-0758
www.norvaplastics.com

473c

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

473d. Shower doors

Soft Suicide Prevention Door

Kennon Products, Inc.
Sheridan, WY 82801
307-674-6498
www.suicideproofing.com


#473d

473e. Shower door hinge

SwingHinge double action continuous hinge for SHOWER DOOR with surface cap and hinge cover plate # KG203

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com


#473e

473f. Shower door rubber fin

Shower System Rubber Fin and mounting Section with top fixing bracket #SRF01

Kingsway Group USA
Royal Oak, MI 48073
800-783-7980
www.kingswaygroupusa.com

#473f

12 46 23 – Decorative Crafts

475. Vinyl artwork

Soft Suicide Prevention Artwork (SSPA)

Kennon Products, Inc.
Sheridan, WY 82801
307-674-6498
www.suicideproofing.com


#475

476a. Ligature-resistant frames

Solid surface frames

Custom Design Frameworks
Mechanicsville, VA 23111
804-476-4233
www.customdesignframeworks.com


#476a

476b. Ligature-resistant frames

AF550 Ligature-Resistant Art Frame

Behavioral Safety Products
Watkinsville, GA 30677
706-705-1500
www.besafepro.com


#476b

476c. Display boards

Tak-Les Bulletin Board with Guardian Frame

RAO Contract Sales, Inc.
Paterson, NJ 07501
800-445-7065
www.rao.com


#476c

12 52 70 – Healthcare Seating

479a.Stools

OFS Brands; Boost Ottoman

OFS Brands
Huntingburg, IN 47542
800-521-5381
info@ofsbrands.com


#479a

479b. Stools

Norix: Slammer Stool Series

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com

480a. Sand-ballasted seating

Ultra-Max Series

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com

480b. Sand-ballasted seating

Pineapple; Skye Plus ASKYP1-400

Pineapple Contracts
Clawson, MI 48017
800-496-9324
www.pineapplecontracts.com

480c. Sand-ballasted seating

Hardi Series Dining Chair #8701

Spec Furniture Inc.
Toronto, Ontario M9W 5B1
Canada
888-761-7732
www.specfurniture.com

481a. Lightweight seating

Integra Series chairs

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com

481b. Lightweight seating

RazorBack Chair

Cortech® USA
Willowbrook, IL 60527
800-571-0770
www.cortechusa.com


#481b

481c. Lightweight seating

Stackable chair #5000-20 Modumaxx

Moduform
Fitchburg, MA 01420
800-221-6638
www.moduform.com


#482e

481d. Lightweight seating

Boden Series seating

Pineapple Contracts, Inc.
Clawson, MI 48017
800-496-9324
www.pineapplecontracts.com


#481d

482a. Upholstered seating

Sierra Series chairs with solid arms

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com


#482a

482b. Upholstered seating

Meridian Behavioral Health Seating – chair # ML30/27BH

Nemschoff
Sheboygan, WI 53081
800-203-8916
www.nemschoff.com


#482g

#482b

482c. Upholstered seating

Wink Series Chair

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com


#482c

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

482d. Upholstered seating
Endurance Series
Blockhouse Company, Inc.
York, PA 17406
800-346-1126
www.blockhouse.com

#482d

482e. Upholstered seating
Dignity Series #4501M
Spec Furniture Inc.
Toronto, Ontario M9W 5B1
Canada
888-761-7732
www.specfurniture.com

482f. Upholstered seating
Carrara
Kwalu
Atlanta, GA 30328
877-695-9258
www.kwalu.com

#482f

482g. Upholstered seating
Arcadia Series
Blockhouse Company, Inc.
York, PA 17406
800-346-1126
www.blockhouse.com

482h. Upholstered seating
Sierra Series chairs with open arms
Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com

#482h

482i. Upholstered seating
Skye Plus ASKYP1-400
Pineapple Contracts, Inc.
Clawson, MI 48017
800-496-9324
www.pineapplecontracts.com

482j. Upholstered seating
Domus Lounge Seating
Pineapple Contracts, Inc.
Clawson, MI 48017
800-496-9324
www.pineapplecontracts.com

482k. Upholstered seating
Chaise Lounge Chair
Blockhouse Company, Inc.
York, PA 17406
800-346-1126
www.blockhouse.com

483a. Rockers
RockSmart
Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com

483b. Rockers
Hardi Rocking Chair
Spec Furniture
888-761-7732
specfurniture.com

483c. Rockers

Endurance Series Rocker

Blockhouse Company, Inc.
York, PA 17406
800-346-1126
www.blockhouse.com

#483c

484a. PVC molded seating

Forté™ Lounge

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com

#484a

484d. PVC molded seating

Hondo® Nuevo

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com

#484d

12 56 70 – Healthcare Furniture

485a. Tables

Jupiter Series Tables

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com

#485a

485b. Tables

Madera Series Tables

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com

#485b

485c. Tables

Tabla Series Drum Tables

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com

#485c

490a. Electrically adjustable hospital bed

Behavioral Health Bed™

Sizewise
Lenexa, KS 66215
800-814-9389
www.sizewise.com

#490a

490b. Electrically adjustable hospital bed

Spirit Bed with Mental Health Package

CHG Hospital Beds
London, ON N6E 1R6
Canada
866-516-5446
www.chgbeds.com

#490b

490c. Electrically adjustable hospital bed

MedSurg Bed #S3

Stryker
Kalamazoo, MI 49002
269-385-2600
www.stryker.com

#490c

490d. Electrically adjustable hospital bed

Mental Health Electric Bed

Umano Medical, Inc.
G0R 2Co, Canada
1-844-409-4030
www.umanomedical.com

#490d

491a. Bedding

One Piece Comfort and Safety Linen

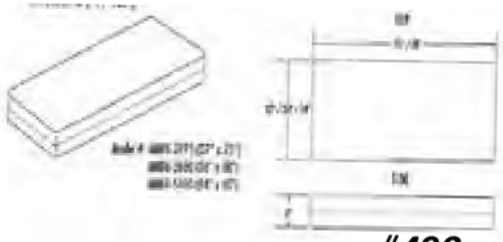
Harm Reduction Solutions
San Diego, CA 92117
858-500-2110
www.harmreductionsolutions.com

#491a

492a. Behavioral health mattresses

Comfort Shield® Remedy Sealed Seam Mattress

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com



#492a

492b. Behavioral Health Mattresses

Victory Series Mattresses

Sizewise
Lenexa, KS 66215800-814-9389
www.sizewise.net

492c. Behavioral health mattresses

Behavioral Health Mattress with Bed Bug Prote...

BioArmour™ Infection Control Composite Lamina

Surface

American Innovation Products
Trinity, NC 27370
814-490-0660
www.americaninnovationproducts.com

#492c

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

492d. Behavioral health mattresses

Closed System™ Behavioral Health Mattress

Comfortex®
Winona, MN 55987
800-445-4007
www.comfortexinc.com

493a. Platform bed

Attenda Series Roto Cast Bed

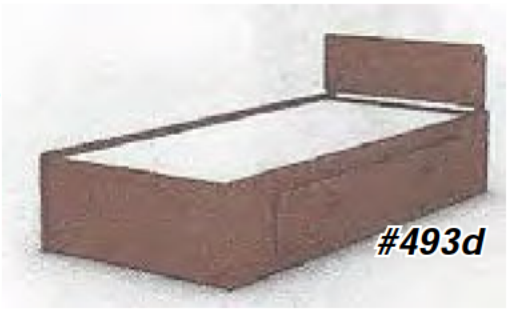
Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com

#493a

493d. Platform bed

Behavioral Health Beds # BHBP/68 and BHHD/68

Nemschoff
Sheboygan, WI 53081
800-203-8916
www.nemschoff.com



#493d

493e. Platform bed

Pineapple; Sovie Bed 1SVFA-100

Pineapple Contracts, Inc.
Clawson, MI 48017
800-496-9324
www.pineapplecontracts.com

493g. Platform bed

Behavioral Health Bed™ - Platform

Sizewise
Lenexa, KS 66215
800-814-9389
www.sizewise.com

#493g

493h. Platform bed

Frontier bed

Stance Healthcare
Kitchener, ON N2C 0B8
877-395-2623
www.stancehealthcare.com


#493h

494a. Platform bed – lift-accessible

Sleigh Bed

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com


#494a

494b. Platform bed riser – lift-accessible

Platform Bed Riser

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com


#494b

495a. Patient room furniture

VISTA Series

Blockhouse Company, Inc.
York, PA 17406
800-346-1126
www.blockhouse.com


#495a

495b. Patient room furniture

Safehouse Series

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com


#495b

495c. Patient room furniture
Safe & Tough series
This End Up® Furniture Company, Inc.
Sanford, NC 27331
800-605-2130
www.thisendup.com/groupliving.com


#495c

495d. Patient room furniture
Endurance Series
Cortech® USA
Willowbrook, IL 60527
800-571-0770
www.cortechusa.com


#495d

495e. Patient room furniture
Attenda Series
Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com


#495e

496a. Patient room cabinets
Fortress Wardrobes
Moduform
Fitchburg, MA 01420
800-221-6638
www.moduform.com


496b

496b. Patient Room cabinets
Frontier bedside cabinet – flip style
Stance Healthcare
Kitchener, ON N2C 0B8
877-395-2623
www.stancehealthcare.com


#496e

496c. Patient Room cabinets

CPAP Cabinet

Blockhouse Company, Inc.
York, PA 17406
800-346-1126
www.blockhouse.com

496c

497a. Restraint bed

450 Series Seclusion Beds (restraint loops optional)

Moduform
Fitchburg, MA 01420
800-221-6638
www.moduform.com

#497a

497b. Restraint bed

Duraguard bed with side bars

Glasspec Corporation
Miami, FL 33256-0116
800-328-0888
www.glasspec.com

#497b

498a. Removable Restraint Loops

Attenda Restraint Rings (for use with Attenda beds)

Norix Group, Inc.
West Chicago, IL 60185
800-234-4900
www.norix.com

#498a

498b. Removable Restraint Loops

Restraint Adapter and Buckle System

SydLo Design LLC
South Range, Wisconsin
218-310-4351
SydLoDesignLLC.com

#498b

499a. Nurse servers
WALLAroo®
Carstens®, Inc.
Chicago, IL 60706
800-782-1524
www.carstens.com


#499a

499b. Nurse servers
Proximity EXT-28
Proximity Systems
800-437-8111
www.proximiitysystems.com

#499b

12 93 43 – Site Furnishings - Seating and Tables

510. Outdoor Furniture
Hilltop Outdoor Furniture
Norix Group, Inc.
West Chicago, IL 60185
1-800-234-4900
www.norix.com


#510

21 00 00 - Fire Suppression

21 13 13 - Fire Suppression Sprinkler Systems

520a. Fire sprinklers
Raven 5.6K Institutional Sprinklers
TYCO Fire Protection Products
Lansdale, PA 19446
800-523-6512
www.tyco-fire.com


#520a

520b. Fire sprinklers
819-S17 SR Sprinkler
Weizel Security
800-308-3627
www.securinghospitals.com

521a. Fire extinguisher cabinet

BestCare® Ligature-Resistant Recessed Fire Extinguisher Cabinet WH1704

Whitehall Manufacturing
City of Industry, CA 91744-0527
800-782-7706
www.whitehallmfg.com

#521a

22 43 00 – Plumbing Fixtures

22 43 13 – Healthcare Water Closets

531. Toilet fixture, ADA–floor-mounted, back outlet

Huron EverClean Flushometer Toilet with integral seat

American Standard
Piscataway, NJ 08855
800-488-8049
www.americanstandard-us.com

#531

533. Solid-surface toilet fixture

CWC-156 AST-FF Behavioral HealthCare Toilet

Intersan Manufacturing Company
Phoenix, AZ 85007
602-254-3101
www.intersan.us

#533

534a. Stainless steel toilet

ETW-1490 Series

Willoughby Industries
Indianapolis, IN 46268
800-428-4065
www.willoughby-ind.com

#534a

534b. Toilet fixture – stainless steel

BestCare® Ligature-Resistant Toilet, Wall Supply, WH2142-W

Whitehall Manufacturing
City of Industry, CA 91744
800-782-7706
www.whitehallmfg.com

#534b

536. Bariatric toilet fixtures

BET-1490 Series – Bariatric toilets

Willoughby Industries
Indianapolis, IN 46268
800-428-4065
www.willoughby-ind.com

#536

22 43 16 – Healthcare Sinks

540a. Wall-Hung Corner Lavatories

BestCare® Ligature-Resistant, ADA Compliant Corterra Cast Solid Surface Corner Basin; WH3776 Series

Whiteall Manufacturing
City of Industry, CA 91744-0527
800-782-7706
www.whitehallmfg.com

#540a

541a. Wall-Hung Lavatories

HSL1 SafeCare Ligature-Resistant Lavatory – stainless steel or high- impact polymer trap cover

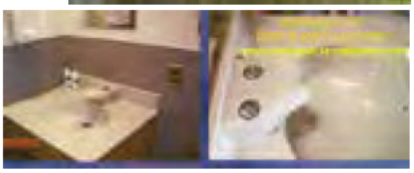
Bradley Corporation
Menomonee Falls, WI 53051
800-272-3539
www.bradleycorp.com

#541a

542a. Vanity top lavatory

Suicide Prevention Patient Sink Faucet

Norva Plastics, Inc
Norfolk, VA 23508
800-826-0758
www.norvaplastics.com



#542a

542b. Vanity top lavatory

Avonite® Acrylic Solid Surfaces

Avonite Surfaces
Florence, KY 41042
800-354-9858
www.avonite.com

#545

545. Hand Washing

Wallgate; Thrii (soap, water, drying)

Intersan Manufacturing Company
Phoenix, AZ 85007
602-254-3101
www.intersan.us

#545

22 43 19 – Healthcare Bathtubs and Showers

550a. Shower head – ligature resistant

SP-7 Shower Head

Odd Ball Industries Mfg. Co., Inc.
Greenlawn, NY 11740
631-754-0400
www.oddballindustries.com

#550a

550c. Shower head – ligature resistant

Ligature-Resistant Shower Head – SH330

Behavioral Safety Products
Watkinsville, GA 30677
706-705-1500
www.besafepro.com

552a. Shower Control Valve

#550c

WH538-CSH Ligature-Resistant Shower Head and Valve

Whitehall Manufacturing
City of Industry, CA 91744-0527
800-782-7706
www.whitehallmfg.com


#563c

552b. Shower valve

Ligature-Resistant Shower Valve – SV230

Behavioral Safety Products
Watkinsville, GA 30677
706-705-1500
www.besafepro.com


#552b

552c. Shower valve

834-S40 SRTM Retrofit Shower Knob

Weizel Security
800-308-3627
www.securinghospitals.com


#552c

552d. Shower valve

Sense™ DMV2 – Individual Shower concealed electronic mixing valve with optional stainless steel cover

Armstrong International
Three Rivers, MI 49093
269-273-1415
www.armstronginternational.com


#552d

555a. Shower diverter valve

834-SN2 SRTM Diverter Valve Assembly

Weizel Security
800-308-3627
www.securinghospitals.com


#555a

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

560a. Shower assembly
BestCare® Flush-Mount Ligature-Resistant Security Shower WH1741-CSH
Whitehall Manufacturing
City of Industry, CA 91744-0527
800-782-7706
www.whitehallmfg.com


#560a

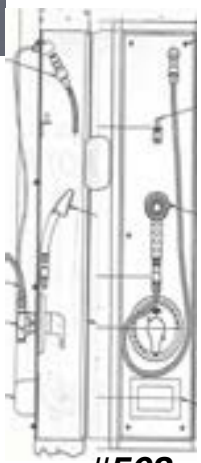
560b. Shower assembly
SR834-S35 SRTM Shower Panel
Weizel Security
800-308-3627
www.securinghospitals.com


#560b

560c. Shower assembly
Ligature-Resistant Shower Panel #SV710
Behavioral Safety Products
Watkinsville, GA 30677
706-705-1500
www.besafepro.com


#560c

562. Shower assembly – recessed hand-held
M0418-E508 in locking box
Acorn Engineering
City of Industry, CA 91746
800-488-8999
www.acorneng.com


#562

563a. Shower assembly – handicapped accessible
Dual Quick Connect – Wall Mounted Shower Head with Integral Diverter #42020US
Intersan Manufacturing Company
Phoenix, AZ 85007
602-254-3101
www.intersan.us


#563a

563b.Shower assembly – handicapped accessible

Quick release hand held shower head; Model 40707

Intersan Manufacturing Company
Phoenix, AZ 85007
800-999-3101
www.intersanus.com

#563c

563c. Shower assembly – handicapped accessible

BestCare® Flush-Mount Ligature-Resistant Security Shower with Dual Heads WH1741-FH-CSH

Whitehall Manufacturing
City of Industry, CA 91744-0527
800-782-7706
www.whitehallmfg.com

#563c

22 43 23 – Shower Receptors and Basins

564a. Shower linear drain

ProLine drain with "dots" cover

QuickDrain USA
Frisco, CO 80443
866-998-6685
www.quickdrainusa.com

#564a

565a. Ligature Resistant Drain Cover

Crocodile Roll Resistant Floor Drain; 303070X

Intersan Manufacturing Company
Phoenix, AZ 85007
800-999-3101
www.intersanus.com

#565a

565b. Ligature Resistant Drain Cover

Tower Industries; Anti-Ligature Drain Cover – Model SDC-AL-1-S

Tower Industries
Massillon, OH 44647
330-837-2216
www.towershowers.com

#565b

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

565c. Ligature Resistant Drain Cover

BestCare® Ligature-Resistant Floor Drain Grate WHDG Series

Whitehall Manufacturing
City of Industry, CA 91746
800-782-7706
www.whitehallmfg.com


#565c

565d. Ligature Resistant Drain Cover

BestCare® Ligature-Resistant Linear Drain with Flashing Flange WHLD Series

Whitehall Manufacturing
City of Industry, CA 91746
800-782-7706
www.whitehallmfg.com


#565d

566. One-piece patient toilet room floor

UniFloor

Bestbath®
Caldwell, ID 83605
800-727-9907
www.bestbath.com


#566

567a. Shower floor basin

The Swan Corporation, Swanstone Solid Surface Shower Floors

The Swan Corporation
St. Louis, MO. 63101
1-314-231-8148
www.theswancorp.com


#567

567b. Shower floor basin

Roll-in shower with front trench

Watermark
Nashville, TN 37204
615-291-6111
www.watermarksolidsurface.com


#567b

567c. Shower floor basin

AquaSurf solid surface shower bases

Willoughby Industries
Indianapolis, IN 46268
800-428-4065
www.willoughby-ind.com

#567c

568a. Pre-built bathrooms

Pre-Built Bathrooms

Eggrock, LLC
Littleton, MA 01460
978-952-8800
www.eggrock.com

#568a

568b. Pre-built bathrooms

SurePods™

Oldcastle®
Orlando, FL 32837
407-859-7034
https://oldcastlesurepods.com

22 43 39 – Healthcare Faucets

570a. Lavatory faucet

Ligature-Resistant Metering Faucet – SF380

Behavioral Safety Products
Watkinsville, GA 30677
706-705-1500
www.besafepro.com

#570a

570b. Lavatory faucet

Suicide Prevention Patient Sink Faucet

Norva Plastics, Inc
Norfolk, VA 23508
800-826-0758
www.norvaplastics.com

#570b

570c. Lavatory faucet

BestCare® Ligature-resistant, ADA-compliant faucet 3377 w/2 two pneumatic buttons

Whiteall Manufacturing
City of Industry, CA 91744-0527
800-782-7706
www.whitehallmfg.com

3570c

570d. Lavatory faucet

BestCare® Ligature-resistant, ADA-compliant Sensor faucet #WH3375-SO

Whitehall Manufacturing
City of Industry, CA 91744-0527
800-782-7706
www.whitehallmfg.com

#570d

574. Lavatory with countertop valve

Lavatory Valve

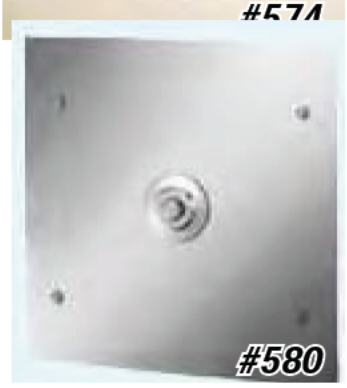
Odd Ball Industries
Greenlawn, NY 11740
631-754-0400
www.oddballindustries.com

22 43 43 – Plumbing Fixture Flushometers

580. Recessed flush valve

Royal 611 & WB-1-A Easy Access Wall Box

Sloan®
Franklin Park, IL 60131
800-982-5839
www.sloan.com



#580

581a. Recessed flush valve

Regal 955 Hydraulic Concealed Flushometer & WB-1-A Easy Access Wall Box

Sloan®
Franklin Park, IL 60131
800-982-5839
www.sloan.com

#581a

581b. Recessed flush valve

CX Manual Flushometer (Recessed)

Sloan®
Franklin Park, IL 60131
800-982-5839
www.sloan.com

#581b

581c. Recessed flush valve

3-inch Push Button Assembly for Concealed Flush Valves – P6000-NL3

Zurn Industries
Milwaukee, WI 53204
855-663-9876
www.zurn.com

#585a

585a. Flush valve cover

HSC79 SafeCare Ligature-Resistant Flush Valve Cover

Bradley Corporation
W142N9101 Fountain Boulevard Menomonee Falls, WI 53051
800-272-3539
www.bradleycorp.com

585b. Flush valve cover

FV500 (2 piece) & FV600 (1 piece) Ligature Resistant Flush Valve Cover

Behavioral Safety Products
Watkinsville, GA 30677
706-705-1500
www.besafepro.com

#585b

585c. Flush valve cover

831-S39 SRTM Flush Valve Cover

Weizel Security
Coquitlam, BC, Canada V3K 6V5
800-308-3627
www.securinghospitals.com

#585c

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585d. Flush valve cover

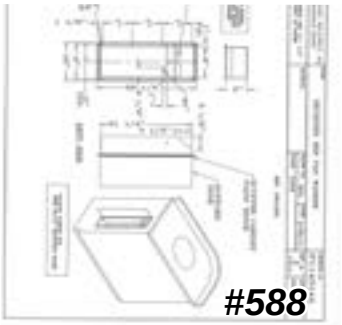
Ligature-Resistant Box with Flush Valve WH2802 – for various toilet or urinal

Whitehall Manufacturing
City of Industry, CA 91744-0527
800-782-7706
www.whitehallmfg.com

588. Recessed bedpan washer

Recessed Bedpan Washer

Willoughby Industries
Indianapolis, IN 46268
800-428-4065
www.willoughby-ind.com



22 47 00 – Water Station Water Coolers

589a. Drinking water cup filling stations

B103-C2-HR Water Bottle Filling Station Cup Dispenser and Disposal with security features

Filtrine Manufacturing Company
Keene, NH 03431
800-930-3367
www.filtrine.com

589b. Drinking water cup filling stations

Quench 755 Countertop Filtered Water Cooler with UV

Quench
King of Prussia, PA 19406
888-877-0561
www.quenchonline.com

589c. Drinking water cup filling stations

Pushbutton Ligature-Resistant Cup Filler – WHBF3

Whitehall Manufacturing
City of Industry, CA 91744-0527
800-782-7706
www.whitehallmfg.com


#589c

22 60 00 – Gas and Vacuum Systems

590a. Medical gas covers

Security Patient Console

Hospital Systems, Inc.
Pittsburg, CA 94565
925-427-7800
www.hsiheadwalls.com


#590a

590b. Medical gas covers

Recessed Security Console

Modular Services Company
Oklahoma City, OK 73114
800-687-0938
www.modularservices.com/products-services/


#590b

590c. Medical gas covers

Security Headwalls w/ 3/8" polycarbonate locked cover bottom hinge

Modular Services Company
Oklahoma City, OK 73114
800-687-0938
www.modularservices.com
www.filtrine.com


#590c

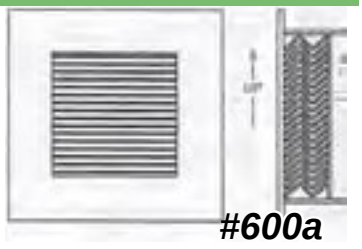
23 00 00 – Heating, Ventilating, A/C

23 37 13 – Diffusers, Registers and Grilles

600a. Air grille - “S” vane

Security Grille – “S” vane # RSPA41

Carnes® Company
Verona, WI 53593
608-845-6411
www.carnes.com

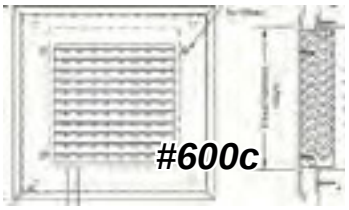


#600a

600c. Air grille - “S” vane

V-Vent High Security Grille #814-R17 SRTM

Weizel Security
800-308-3627
www.securinghospitals.com

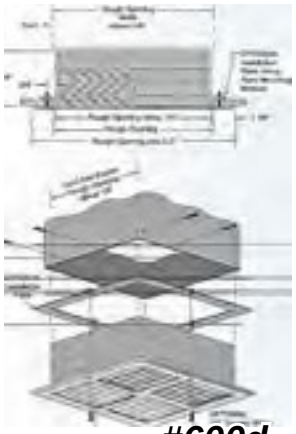


#600c

600d. Air grille - “S” vane

Maximum Security Ceiling Diffuser # SV432

Anemostat® Air Distribution
Carson, CA. 90745
310-835-7500
www.anemostat.com



#600d

602a. Air grille – max security

Extra Heavy Duty Grille with Removable Steel Perforated Face Plate # RRMX

Anemostat® Air Distribution
Carson, CA. 90745
310-835-7500
www.anemostat.com

#602a

602b. Air grille – max security

Maximum Security Suicide Deterrent Grille, steel with 3/16-inch holes # SG-SD

Titus
Plano, TX 75074
972-212-4800
www.titus-hvac.com

#602b

603a. Air grilles - Perforated

Security Grille – Perforated # RSPA51

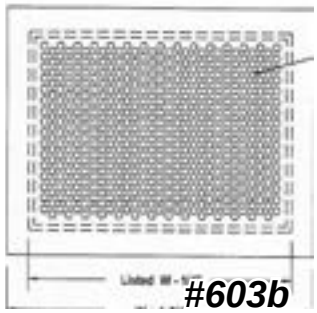
Carnes® Company
Verona, WI 53593
608-845-6411
www.carnes.com

#603a

603b. Air grilles - Perforated

Security Grille – supply or return # SEG-4P3

Kees Incorporated
Elkhart Lake, WI 53020-0327
920-876-3391
www.kees.com



#603b

603c. Air grilles - Perforated

Ligature-Resistant Exhaust/Supply Grille #EG450

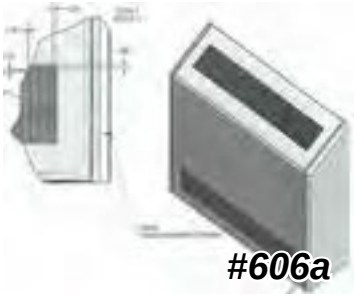
Behavioral Safety Products
Watkinsville, GA 30677
706-705-1500
www.besafepro.com

#603c

606a. Fan coil enclosures

Fan Coil Covers - Security

ARSCO Manufacturing Company
Cincinnati, OH 45248
800-543-7040
www.arscomfg.com

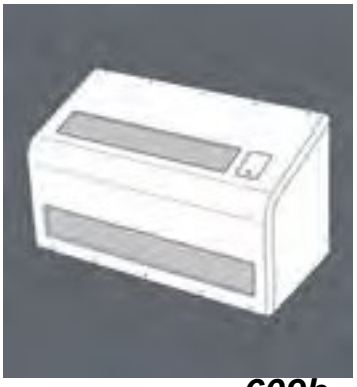


#606a

609b. Air grilles - Perforated

Ligature-Resistant PTAC Cover #TA640

Behavioral Safety Products
Watkinsville, GA 30677
706-705-1500
www.besafepro.com



609b

607a. Room Temperature Sensor – tamper-resistant

Flush-Mount Thermistor; KTP Series Stainless Steel

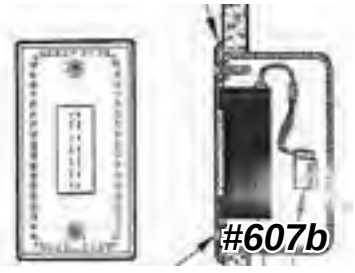
Kele, Inc.
Bartlett, TN 38133
877-826-9045
www.kele.com

#607a

607b. Room Temperature Sensor – tamper-resistant

Flush-Mount Room Temperature Sensor #540-520

Siemens Building Technologies, Inc.
1000 Deerfield Parkway
Buffalo Grove, IL 60089
www.siemens.com



#607b

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26 27 26 – Electrical Devices

610a. Hospital-grade receptacles

Hospital Grade Tamper-Resistant GFCI Receptacles

Hubbell Incorporated
Shelton, CT 06484
800-288-6000
www.hubbell-wiring.com

#610a

610b. Hospital-grade receptacles

Hospital Grade Tamper-Resistant GFCI Receptacles

Cooper Industries
Houston, TX 77210-4446
713-209-8400
www.cooperindustries.com

#611a

611a. Key-operated electric switches

Pass & Seymour Locking Keyed Switch

Legrand North America, LLC
http://www.legrand.us/passandseymour.aspx

611b. Key-operated electric switches

Leviton 1221-2KL Key Locking Extra Heavy Duty Switch

Leviton Manufacturing Co., Inc.
www.leviton.com

#611b

612a. Polycarbonate electrical coverplates

Tiger Plates

Cortech® USA
Willowbrook, IL 60527
800-571-0700
www.cortechusa.com

#612a

26 51 00 – Interior Lighting

620a. Light fixture

NASL-RND LED 2' diameter w/ flat polycarbonate lens

Day-O-Lite
Warwick, RI 02888
401-467-8232
www.dayolite.com

#620a

620b. Individual reading light

Symmetry tamper-resistant light fixture

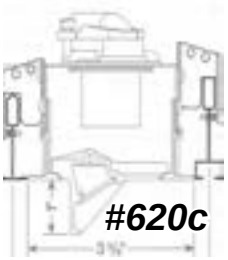
Visa Lighting
Milwaukee, WI 53209
www.visalighting.com

#620b

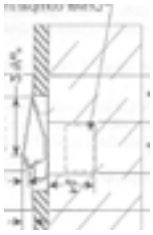
620c. Light fixture

Fino® ceiling mount and wall mount light fixtures

Amerlux®, LLC
Oakland, NJ 07436
973-882-5010
www.amerlux.com



#620c



#620c

620d. Light fixture

Mighty Mac TW Series TUNABLE Color SSA Slope Sided Surface Mount or RMCD Recessed Mount vandal resistant light fixtures

Kenall®
Kenosha, WI 53144
800-453-6255
www.kenall.com

#620d

620e. Light fixture

Fail-Safe SGI recessed, sealed, and gasketed with polycarbonate lens

Eaton's Cooper Lighting
Peachtree City, GA 30269
770-486-4800
www.cooperindustries.com

#620e

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

620f. Light fixture

818-R13 SRTM Recessed Ceiling Lighting with polycarbonate lens

Weizel Security
800-308-3627
www.securinghospitals.com


#620f

620g. Light fixture

~~***Serenity -***~~ ***Vissage Series***

Visa Lightin
Milwaukee, WI 53209
800-788-8472
www.visalighting.com


#620g

620h. Light fixture

Ligature & Vandal-Resistant 6" LED downlight #MRV-06858

Kirlin Company
Detroit, MI 48207
313-259-6400
www.kirlinlighting.com


#620h

620j. Light fixture

Sonar 12 SPC12 Vandal Resistant wall mount fixture

Luminaire Lighting Corporation
P. O. Box 2162
Edison, NJ 08818
732-549-0056
www.luminairelighting.com


#620j

620k. Light fixture

Shat-R-Shield - Ironclad VR Pro surface mounted vandal-resistant fixture #494F12

Grainger
Lake Forest, IL 60045
800-472-4643
www.grainger.com


#620k

620l. Light fixture

Vandal Resistant round wall/ceiling mount fixture Anyx-13, ARV-13

Luminaire Lighting Corporation
Edison, NJ 08818
732-549-0056
www.luminairelighting.com


#620l

620m. Light fixture

Kenall MedMaster MedSlot Series

Kenall®
Kenosha, WI 53144
800-453-6255
www.kenall.com

#620m

620n. Light fixture

Fail-Safe FW WaveStream Wall LED Luminaire

Eaton Lighting
770-486-4800
www.eaton.com/lighting

#620n

624. Individual reading light

Visa Lighting; Gig with BH1 mounting bracket & polycarbonate lens

Visa Lighting
Milwaukee, WI 53209
800-788-8472
www.visalighting.com

#624

630. Downlight cover

Recesso Lights

Recesso Lighting by Dolan Designs
Kirkland, WA 98034
877-357-6127
http://recessolighting.com

#630

637. Exterior lighting

Exterior Vandal Resistant Lighting

The Kirlin Company
Detroit, MI 48207
313-259-6400
www.kirlinlighting.com

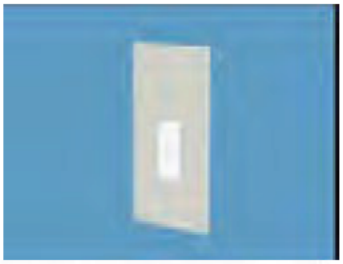
#637

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

639a. Night-light

LNT-03092 Night Light

The Kirlin Company
Detroit, MI 48207
313-259-6400
www.kirlinlighting.com



639b. Night-light

CM-25500 PathMaster Step Light

Phillips Lighting North America Corp.
(Chloride)
Somerset, NJ 08873
855-486-2216
www.lightingproducts.phillips.com

#639b

26 53 00 – Exit Signs

640a. Exit signs, LED – vandal-resistant

Commercial Exist Signs SC Series – Cast Aluminum LED wit[illegible] lens and tamperproof hardware

Philips Lighting North America Corporation (Chloride)
Somerset, NJ 08873
855-486-2216
www.lightingproducts.philips.com

#640a

640b. Exit signs, lighted – vandal-resistant

Mighty Mac MMEX Surface, Wall, or Ceiling Mount Single/Double Face Exit w/ full-length mounting canopy

Kenall®
Kenosha, WI 53144
800-453-6255
www.kenall.com

#640b

642. Exit signs - photoluminescent

EX424246-100G Ecoglo® Photoluminescent Exit Sign

Access Products Inc.
Buffalo, NY 14203
888-679-4022
www.us.ecoglo.com

26 55 53 – Security Lighting

643. Covers

Norva Plastics – Life/Fire Safety Lexan Covers

Norva Plastics, Inc
Norfolk, VA 23508
800-826-0758
www.norvaplastics.com

27 00 00 – Communications

27 32 13 – Telephone Sets

645a. Stainless steel wall phones

GB306V-14 Vandal-Resistant Telephone with 14" armored cord

Allen Tel Products, Inc.
Henderson, NV 89014
702-855-5700
www.allentel.com

645b. Stainless steel wall phones

SSW-321-X Ceeco Stainless Steel Wall Phone

TWAcomm.com
Fountain Valley, CA 92708
877-389-0000
www.twacomm.com

645c. Stainless steel wall phones

JP3500 Armored Courtesy Phone

G-Tel Enterprises, Inc.
Houston, TX 77084
800-884-4835
www.payphone.com

27 52 23 – Nurse Call/Code Blue Systems

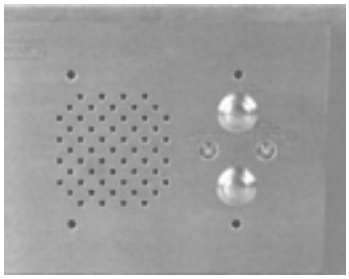
650a. Wireless duress alarm
INSTANTalarm® 5000
Pinpoint®, Inc.
Birmingham, AL 35209
205-414-7541
www.pinpointinc.com


#650a

650f. Wireless duress alarm
B3000n Communication Badge
Vocera®
San Jose, CA 95126
888-986-2372
www.vocera.com


#650f

653. Nurse call system – vandal-resistant
HSS401 Responder Health Care Communications System High Security Staff Duty Station
Rauland-Borg Corporation
Mount Prospect, IL 60056
800-752-7725
www.rauland.com


#653

654. Pushbutton switch – vandal-resistant
PV1-PV8 Anti-Vandal Switches
Lamb Industries
Minneapolis, MN 55428
800-867-2717
http://www.e-switch.com/


#654

28 00 00 – Electronic Safety and Security

28 40 00 – Electronic Monitoring and Control

660. Metal Detectors

Metrasens; Proscreen 200

Metrasens
Lisle, IL 60532
630-541-6509
http://www.metrasens.com/

32 00 00 – Exterior Improvements

32 31 13 – Security Fencing

675a. Security fencing

Mini-Mesh chain-link fencing

Fence Factory
Agoura Hills, CA 91301
800-613-3623
www.fencefactory.com

675b. Security fencing

WireWall® High Security Fencing - Maximum Security

Riverdale Mills Corporation
Northbridge, MA 01534
800-762-6374
www.riverdale.com

675c. Security fencing

Steel fence systems

METALCO Fence & Railing Systems, Inc.
Las Vegas, NV 89102
800-708-2526
fence-system.com

675d. Security fencing

Fortress Fencing

Britplas
Woolston
Warrington, Cheshire, England WA1 4RW
+44(01)-1925-824317
www.britplas.com

About the Authors

Kimberly Newton McMurray, AIA, EDAC, NCARB, MBA is Principal of Behavioral Health Facility Consulting, LLC. of Tuscaloosa, Alabama; an organization that consults with behavioral health organizations and architects who design behavioral health facilities regarding their unique requirements for patient and staff safety. McMurray is a licensed architect and healthcare planner with over 35 years of project leadership experience in healthcare and academic medical campus architecture; she has been responsible for the implementation of large architectural projects located within complex medical campus sites, delivering the highest quality for each project initiative. McMurray has a decade of experience from the owner's perspective and working with multi-disciplinary user groups, thereby embracing a unique perspective and response to client needs; applying her knowledge of clinical operations, evidence-based design, lean operational planning and conceptual design to architecture. Among McMurray's three decades of healthcare architectural expertise, she brings a high-level of experience with behavioral and mental health project types. She has assisted in over 65 behavioral and mental health facility space programs, master plans, designs and PSSRs since joining BHFC in 2017. She can be reached at kimberly@bhfcllc.com.

James M. Hunt, AIA, is a retired architect and facility management professional with more than 40 years of experience. He is a registered architect and began his career practicing architecture for several major health care projects. He then served as director of facility management for the Menninger Clinic for 20 years. In addition to managing the clinic's main campus, he consulted on behavioral health care unit remodeling projects for their Clinical Network program in eight states. During this time, Mr. Hunt was a founding member of the Health Care Council of the International Facility Management Association. He held several offices in the council, including chair. He publishes articles and speaks at major conferences frequently. He is founder and Retired Senior Consultant of Behavioral Health Facility Consulting, LLC (BHFC), an organization that consults with behavioral health organizations and architects who design behavioral health facilities regarding their unique requirements for patient and staff safety. He has worked with behavioral health facilities in more than 40 years and may be reached at www.bhfcllc.com.

David M. Sine, DrBE, CSP, ARM, CPHRM - 25 years in safety, risk management, human factors, and organizational consulting. He has been state safety director of two eastern states, senior staff engineer for the Joint Commission, and a senior consultant for the American Hospital Association. Founding partner and one-time contributing editor for Briefings on Hospital Safety, co-author of Quality Improvement Techniques for Hospital Safety, and one-time vice chair of the board of Brackenridge Hospital in Austin, Texas, Mr. Sine is certified by the Joint Board of the American Board of Industrial Hygiene and Certified Safety Professionals and as a Certified Professional Healthcare Risk Manager by ASHRM. He has been a health care risk management consultant since 1980 and has conducted more than 1,300 Joint Commission compliance assessment surveys. He serves as a member of the NFPA 101 Life Safety Code Subcommittee on Health Care Occupancies, the Joint Commission Committee on Healthcare Safety, and the FGI Health FGI Guidelines Revision Committee and acts as a risk management adviser to the National Association of Psychiatric Health Systems. He served in the corporate offices of the Tenet Health System in Dallas as director of risk assessment and loss prevention and vice president of occupational health and safety. Mr. Sine continues to write and lecture extensively on health care policy, governance, quality improvement, and risk management as President of SafetyLogic Systems. He can be reached at dsine9@gmail.com.

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.

List of Manufacturers

Access Products,
www.us.ecoglo.com

Accurate,
www.accuratelockandhardware.com

Ace Security,
www.smashandgrab.com

Acorn Engineering Co.,
www.acorneng.com

Allen Tel Products,
www.allentel.com

Alro Plastics,
www.alro.com

American Innovation,
www.americaninnovationproducts.com

American Specialties,
www.americanspecialties.com

American Standard,
www.americanstandard-us.com/

Anemostat,
www.anemostat-hvac.com

Archer Manufacturing,
www.vandalproof.org

Armstrong Ceiling Solutions,
www.armstrongceilings.com

Armstrong Flooring,
www.armstrong.com

Armstrong International,
http://armstronginternational.com

Arsco,
www.arscomfg.com

Avonite,
www.avonitesurfaces.com

BASF,
www.master-builders-solutions.basf.us

Behavioral Safety Products,
www.besafepro.com

Best Access Solutions, Inc.,
http://www.bestaccess.com/index.php/products/behavioral-health-products/

Bath,
www.best-bath.com

Big John,
www.bigjohntoiletseat.com

Blockhouse,
www.blockhouse.com

Bradley,
www.bradleycorp.com

Brey-Krause
www.breykrause.com

Britplas,
www.britplas.com

Carnes,
www.carnes.com

Carstens,
www.carstens.com

Cascade,
www.cascadesh.com

Ceco,
www.cecodoor.com

CHG,
www.chgbeds.com

Chloride,
www.chloridesys.com/chloride

CompX,
www.compx.com

Comfortex,
www.comfortex.com

Cooper,
www.cooperindustries.com

Cortech,
www.cortechusa.com

CS Acrovyn,
www.c-sgroup.com

Curries,
www.curries.com

Custom Design Frameworks,
www.customdesignframeworks.com

Dano Group,
http://www.danogroup.com

Designplan,
www.designplan.com

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Dex-O-Tex,
www.dexotex.com

DHSI,
www.dhsi-seal.com

Door Control Services,
www.doorcontrolsusa.com

Door Switch,
http://thedoorswitch.com

Draper, Inc.,
www.draperinc.com

Dur-A-Flex,
www.dur-a-flex.com

Dynalock Corp,
www.dynalock.com

Eggrock,
www.eggrock.com

Fence Factory,
www.fencefactory.com

Filtrine Manufacturing Co.;
www.filtrine.com

Flexco,
www.flexcofloors.com/

Flxsigns,
www.290signs.com

G-Tel,
www.payphone.com/

Glasspec Corporation,
www.glasspec.com

Global,
www.security-glazing.com

GoJo Industries,
www.GOJO.com

Grahan Wood Doors,
www.grahamdoors.com

Grainger,
www.grainger.com

Hafele,
www.hafele.com/us/index.htm

Hager Companies,
www.hagerco.com

Harm Reduction Solutions,
www.harmreductionssolutions.com

Hospital Systems Inc.,
www.HospitalSystems.com

Hubbell,
www.hubbell-wiring.com

IE; Blinds,
www.ieblinds.com

Intersan,
www.intersan.us

Ives,
http://us.allegion.com/

J. L. Industries,
www.jlindustries.com

Johnsonite,
www.roppe.com

Kane Mfg.,
www.kanescreens.com

Kawneer Company, Inc.,
www.kawneer.com

Kees,
www.kees.com

Kele, Inc.,
www.kele.com

Kenall,
www.kenall.com

Kennon Products,
www.suicideproofing.com

King Architectural Products,
www.kingarchitecturalproducts.com

Kingsway Group USA
www.kingswaygroupusa.com

Kirlin,
www.kirlinlighting.com

Kwalu,
www.kwalu.com

L. C. Doane,
www.lcdoane.com

LCN,
http://us.allegion.com/brands/lcn/Pages/default.aspx

Lamb Industries,
www.e-switch.com

Lee's Carpet,
www.leescarpets.com

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Lonseal,
http://lonseal.com

Luminaire,
www.luminairelighting.com

Manko Windows,
www.mankowindows.com

Maiman,
www.maiman.com

Marathon,
www.flexcofloors.com

Markar,
https://www.assaabloydooraccessories.us/en/local/assaabloydooraccessoriesus/products/hinges/continuous-pin-barrel-hinges/behavioral-health-hinges/

Marks USA,
www.marksusa.com

Marshfield Door Systems, www.marshfielddoors.com

McMaster-Carr,
www.mcmaster.com

Metalco,
www.fence-system.com

Metrasens,
www.metrasens.com

Mockett, Doug,
www.mockett.com

Moduform,
www.moduform.com

Modular Services Company,
www.modularservices.com

National Gypsum,
www.nationalgypsum.com

Nemschoff,
www.nemschoff.com

Nora Systems, Inc.;
www.nora.com/us

Norix,
www.norix.com

Northwest Specialty Hardware.
www.northwestsh.com

Norva Plastics,
www.norvaplastics.com

Odd Ball,
www.oddballindustries.com

O'Keeffe's, Inc.,
www.safti.com

Oldcastle,
www.oldcastlebe.com

Pabco Gypsum,
www.quietrock.com

Padded Surfaces,
paddedsurfaces.com/CAD.html

Pecora,
www.pecora.com

Peerless A-V,
www.perlessmounts.com

Pineapple,
www.pineapplecontracts.com

Pinpoint,
www.pinpointinc.com

Quench;
www.quenchonline.com

Quick Drain USA,
www.quickdrain.com

RAL & Associates,
www.ieblinds.com

Rauland - Borg Corp.,
www.rauland.com

Re*cesso Lights,
http://recessolighting.com/

Riverdale Mills,
www.wirewall.com

ROA Contract Sales,
www.rao.com

Rockwood,
www.rockwoodmfg.com

Roppe,
www.roppe.com

Sabic,
www.sabic.com

SaftiFirst (O'Keeffe's, Inc.),
www.safti.com

Safehinge-Primera
www.safehingeprimera.com

Sani-liner,
www.wisconsinconverting.com

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Sargent Lock,
www.sargentlock.com

Schlage,
http://us.allegion.com

Scotchshield,
http://solutions.3m.com/

Securitech Group, Inc.,
www.securitech.com

Sheffield,
www.sheffieldplastics.com

Sherwood Windows Group,
www.sherwoodwindows.com

Siemens Building Technology,
www.siemens.com

Sizewise,
www.sizewise.net

Sloan,
www.sloanvalve.com

Spec,
www.specfurniture.com

Stanley Hardware,
www.stanleyhardware.com

Stanley Security,
www.stanleysecuritysolutions.com

Sto Americas,
www.stocorp.com

Stryker,
www.stryker.com/en-us/products/

Sugatsune,
www.sugatsune.com

Surebond,
www.surebond.com

SydLo Design, LLC,
lrwendt02@gmail.com

Tamperproof Screws,
www.tamperproof.com

Technical Glass Products (TGP),
www.fireglass.com

This End Up,
www.thisendup.com

3M,
www.3m.com

Titus,
www.titus-hvac.com

Top Knobs,
www.myknobs.com

Total Door,
www.total-door.com

Total Lock and Security,
www.totallock.com

Townsteel,
www.townsteel.com

Truebro,
www.truebro.com/plumbing/truebro/lavshield

Truth Hdw.,
www.truth.com

TWA Comm,
www.twacomm.com

2/90 Sign Systems,
www.290signs.com

Tyco,
www.tyco-fire.com

Umano Medical, Inc.,
www.umanomedical.com

Unicel,
www.unicelarchitectural.com/en/index.php

USG Sheetrock,
www.usg.com/content/usgcom/en.html

Vistamatic,
www.vistamaticvisionpanels.com/

Vocera,
www.vocera.com

Wausau Windows,
www.wausauwindow.com

Webb Shade,
www.webbshade.com

Weizel Security,
www.securinghospitals.com

Whitehall,
www.whitehallmfg.com

Willoughby Industries,
www.willoughby-ind.com

Zurn,
www.zurn.com

Inclusion or exclusion of a product does not indicate endorsement or disapproval of that product, nor does it suggest that any product is free of risk. All products must be in compliance with the Safety Risk Assessment for each location.