AUS Design Standards Manual

City of Austin

Department of Aviation

Austin-Bergstrom International Airport

Issue Date: September 2023

Austin-Bergstrom
International Airport

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All Sections In Gray Will Be Developed In A Future Issue Of The Design Standards Manual

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ADMINISTRATIVE

I. EXECUTIVE SUMMARY

The AUS Design Standards Manual (DSM) is a set of standards, guidelines, and design criteria for development, design, construction, and renovations at Austin-Bergstrom International Airport. It sets policies and standards that will assist the City of Austin Department of Aviation (DOA) in reaching its vision to provide a gateway to the world for all – the AUS way every day.

The DSM is intended to promote consistent communication and to establish a minimum set of design parameters including aesthetic, functional, regulatory, and technical development standards for site and facility design projects at AUS. It also includes procedural standards and processes established by the City of Austin Department of Aviation relative to design development and implementation. Airport tenants, project design teams, contractors and the project management team must comply with the DSM and incorporate these standards when developing project work designs at AUS. Project and approval delays may result when this DSM is not followed.

The DSM is a living document that cannot cover every situation. AUS understands that latest ideas, technologies, and lessons learned will arise during the development and execution of a project. Therefore, designers are encouraged to maintain open communication with the AUS project management team to suggest technologies, techniques, materials, and products that are not included in the DSM but that may further the AUS vision and mission. These design standards do not preclude other design approaches if a particular standard does not apply or if it presents functional or aesthetic difficulties. After careful consideration and discussions with the AUS PM, a variance from this DSM may be requested by submitting a written request for consideration.

Development shall follow the applicable sequences and processes established in the Design Standards Manual – including all appendices. Project-specific information, especially which relate to variations in development requirements due to site or program constraints, should be coordinated with the AUS Project Manager.

Design Professionals must comply with all airport design standards and other information contained within the DSM. The Design Standards Manual is organized into five main sections: Administrative, Design Principles, Design Standards, Technical Design, and Supplementary Appendices.

- Administrative: This section provides background information related to AUS and project procedural information.
- Design Principles: This section provides high-level and general design content relevant to all design projects at AUS.
- Design Standards: This section identifies key elements for exterior and interior improvements
- Technical Design: This section provides general technical design standards as well as key specification requirements critical to user group operations
- Supplemental Appendices: This section provides information and links to key documents referebced within the DSM.

Photo Credit: Dave Wilson

II. AUS VISION/MISSION STATEMENT

VISION

TO PROVIDE A GATEWAY TO THE WORLD FOR ALL - THE AUS WAY EVERY DAY.

MISSION

TO PROVIDE SAFE JOURNEYS TO THE WORLD, ECONOMIC OPPORTUNITY TO OUR COMMUNITY, AND BE THE EMPLOYER OF CHOICE.

Photo Credit: Austin Pro Photo

III. ACRONYMS

Acronym	Description
5K PAL	5000 Passenger Activity Level
A(AMP)	Ampere
A/C	Air Conditioning
A/D Hall	Arrivals And Departures Hall
AACE	The Association For The Advancement Of Cost Engineering International
ABV	Above
AC	Air Conditioning
ACI	American Concrete Institute
ACM	Asbestos Containing Material
ACR	Air Conditioning And Refrigeration
ACT	Acoustical Ceiling Tile
ACWP	Actual Cost Of Work Performed
ADA	Americans With Disabilities Act
ADPM	Average Day Of The Peak Month
A/E	Architect / Engineer
AEDP	Austin Expansion And Development Program
AEGB	Austin Energy Green Building
AFCI, AFI	Arc-Fault (Circuit) Interrupter
AFF	Above Finished Floor
AFG	Above Finished Grade
AHJ	Authority Having Jurisdiction
AHU	Air Handling Unit
AIPP	Art in Public Places
AL	Aluminum
AL	Alarm Line
ALP	Airport Layout Plan

Acronym	Description
ANSI	American National Standards Institute
AOA	Aircraft Operations Area
APIS	Advance Passenger Information System
APM	Automated People Mover
APPROX.	Approximate(ly)
AQM	Alternate Queuing Method
ARCH	Architect(ural)
ASHRAE	American Society of Heating, Refrigeration and Air-Conditioning Engineers
ASI	Architect's Supplemental Instruction
ASP	Advanced Surveillance Program
ATO	Airline Ticket Office
ATR	Automatic Tag Reader
AUS	Austin Bergstrom International Airport
AV	Audio/Visual
BAC	Budget at Completion
BAM	Bag Allocation Methodology
BAS	Building Automation System
BCWP	Budgeted Cost of Work Performed
BCWS	Budgeted Cost of Work Scheduled
BHS	Baggage Handling System
BHSC	Baggage Handling System Contractor
BIC	Ball In Court
BICSI	Building Industry Consulting Services International
BIDS	Baggage Information Display System
BIM	Building Information Modeling
BIS	Baggage Inspection Station

Acronym	Description
BJT	Barbara Jordan Terminal
BKR	Breaker
BLDG	Building
BLW	Below
BMA	Baggage Measurement Array
BMS	Building Management System
BOE	Basis of Estimate
BPH	Bags per Hour
BPT	Baggage Process Timer
BRL	Baggage Reinsertion Line
BRP	Baggage Removal Position
BSD	Bag Status Display
BSIS	Baggage Screening Investment Study
BTT	Bag Travel Time
CBIS	Checked Baggage Inspection System
CBP	Customs and Border Protection
CBRA	Checked Baggage Resolution Area
CCI	Construction Cost Index
CCO	City Contracting Organization responsible for Procurement
CCR	CBIS Change Request
CCTV	Closed Circuit Television
CD	Construction Documents
CFCI	Contractor Furnished, Contractor Installed
CFOI	Contractor Furnished, Owner Installed
CHW	Chilled Water System
CI	Control Interface

III. ACRONYMS (cont)

Acronym	Description
CIP	Capital Improvement Program
CKT	Circuit
CL	Centerline
CLG	Ceiling
CM	Construction Manager
CMR / CMAR	Construction Manager at Risk Delivery
CMU	Concrete Masonry Unit
COA	City Of Austin
COND	Condensate Drain
CPI	Cost Performance Index
CPIS	Concept Proposal Information Sheet Form
CRAC	Computer Room Air Conditioning
CSI	Construction Specifications Institute
CSV	Comma-Separated Values
CT	Current Transformer
CTR	Counter
CU	Copper
CUP	Central Utility Plant
CUSS	Common Use Self Service
CWE	Current Working Estimate
DAS	Distributed Antenna System
D-B	Design Build Delivery
DBU	Date of Beneficial Use
DCM	Design Criteria Manual
DD	Design Development
DDFS	Design Day Flight Schedule

Acronym	Description
DEMO	Demolish(Ition)
DEPT	Department
DET	Detail
DHS	Department of Homeland Security
DISC	Disconnect
DIV	Division
DO	Delivery Order
DOA	City of Austin Department of Aviation
DRC	Design Review Commitee
DSM	Design Standards Manual
DWG(S)	Drawing(S)
EA	Each
EAC	Estimate at Completion
ECAD	Energy Conservations and Audit Disclosure
EBSP	Electronic Baggage Screening Program
EC	Electrical Contractor
ECAD	Energy Conservations and Audit Disclosure
EDS	Explosives Detection System
EDS-CP	EDS Competitive Procurement
EF	Exhaust Fan
ELE	Electric(Al)
ELEV	Elevator
EM/EMER	Emergency
EMT	Electrical Metallic Tubing
ENGR	Engineer
EOC	Emergency Operations Center

Acronym	Description
EQPT	Equipment
ER	Existing Relocated
ESC	Escalator
ESG	Environment, Social and Governance
ESM	Enhanced Staffing Model
ETC.	Etcetera
ETD	Explosives Trace Detection
ETR	Existing To Remain
EVM	Earned Value Management
EWC	Electric Water Cooler
EXIST/(E)	Existing
F/A	Fire Alarm
F/S	Fire / Smoke Damper
FA	False Alarm
FAA	Federal Aviation Administration
FAAP	Fire Alarm Annunciator Panel
FACP	Fire Alarm Control Panel
FBO	Fixed Based Operations
FC	Footcandles
FDRS	Field Data Reporting System
FIDS	Flight Information Display System
FIFO	First In First Out
FIS	Federal Inspection Services
FRM	Field Regional Manager
FSD	Federal Security Director
FT	Foot/Feet

III. ACRONYMS (cont)

Acronym	Description
GALV	Galvanized
GBR	Geotechnical Baseline Report
GC	General Contractor
GDM	Geotechnical Design Memorandum
GEC	Grounding Elec. Conductor
GFCI/GFI	Ground Fault (Circuit) Interrupter
GFI	Government Furnished Information
GIDS	Gate Information Display System
GMP	Guaranteed Maximum Price
GND/G	Ground
HMI	Human Machine Interface
HSD	High Speed Diverter
HVAC	Heating, Ventilation, And Air Conditioning
HWG	Hot Water Generators
IATA	International Air Transport Association
ICS	Individual Carrier System
ICS-CERT	Industrial Control Systems Cyber Emergency Response Team
ID	Identification (Or Identifier)
IDF	Intermediate Distribution Frame
IECC	International Energy Conservation Code
IEEE	Institute Of Electrical And Electronics Engineers
IESNA	Illuminating Engineering Society Of North America
IFC	Issued For Construction
IG	Isolated Ground
ILDT	Integrated Local Design Team

Acronym	Description
IMAC	Installation, Move, Add And Change
INFO	Information
INT	Interior
IPS	Integrated Program Schedule
IQ	Image Quality
IQT	Image Quality Test
IRD	Interface Requirements Document
ISAT	Integrated Site Acceptance Test
ISO	International Organization For Standardization
IT	Information Technology
IWG	Industry Working Group
JB/(J-BOX)	Junction Box
JIB	Jetbridge Interface Box
JOC	Job Order Contracting Construction Services
kAIC	Kiloampere Interrupting Capacity
KPI	Key Performance Indicators
kVA	Kilovolt-Amps
LC	Lighting Contactor
LCC	Life-Cycle Cost
LCCA	Life-Cycle Cost Analysis
LCP	Lighting Control Panel
LEO	Law Enforcement Officer
LEED	Leadership in Energy and Environmental Design (rating system; US Green Building Council)
LOS	Loss of Service
LTHW	Low Temperature Hot Water Boiler System
MAP	Million Annual Passengers

Acronym	Description
MAX	Maximum
MCA	Minimum Current Ampacity
MCB	Main Circuit Breaker
MCP	Motor Control Panel
MCS	Master Control Station
MDF	Main Distribution Frame
MECH	Mechanical
MFR	Manufacture(R)
MIN	Minimum
MISC	Miscellaneous
MLO	Main Lug Only
MOCP	Maximum Overcurrent Protection
MTCBF	Mean Time Between Critical Failures
MVW	Moving Walkway
N/A	Not Applicable
N1/N3R/N	Rating (As Noted)
NC	Non-Condensing
NEC	National Electrical Code
NEDS	Networked Explosive Detection Systems
NEMA	Nema 1, Nema 3r,
NFPA	National Fire Protection Association
NIC	Not In Contract
NL	Night Light
NO/#	Number
NOM	Nominal
NTP	Notice To Proceed

III. ACRONYMS (cont)

Acronym	Description
NTS	Not To Scale
O&D	Origin And Destination
O&M	Operating And Maintenance
OAPM	Office Of Acquisition Program Management
OEM	Original Equipment Manufacturer
OFCI	Owner Furnished, Contractor Installed
OFOI	Owner Furnished, Owner Installed
OH	Over Height
OIT	Office Of Information Technology
OL	Over Length
OOG	Out-Of-Gauge
ORAT	Operational Readiness, Activation and Transition
ORCA	Office Of Requirements And Capabilities Analysis
OS	Oversize
OSARP	On-Screen Alarm Resolution Protocol
OSHA	Occupational Safety And Health Administration
OSP	Outside Plant
OSR	On-Screen Resolution
OSRA	On-Screen Resolution Area
OTA	Other Transaction Agreement
OTK	Operational Test Kit
OVT	Osr Viewing Time
OW	Over Width
P	Pole
P+D	Planning And Development
PAL	Planning Activty Level

Acronym	Description
PART	Partial
PC	Photocell
PDB	Progressive Design Build
PDD	Program Definition Document
PDF	Portable Document Format
PDPM	Peak Day Peak Month
PE	Photo Eye
PEC	Photoelectric Cell
PER	Project Engineering Report
PGDS	Planning Guidelines And Design Standards
PH	Phase
PLC	Plug Load Controller
PLC	Programmable Logic Controller
PM	Project Manager
PMIS	Performance Management Information System
PMO	Program Management Office
PNL	Panel
PNR	Passenger Name Record
POC	Point Of Contact
PP	Power Pole
PVC	Polyvinyl Chloride
PVS	Primary Viewing Station
QTY	Quantity
RBS	Risk Based Security
RECEPT	Receptacle
RCP	Reflected Ceiling Plan

Acronym	Description
REF	Refer To / Reference
REQ	Require(D)
RFI	Request For Information
RFID	Radio Frequency Identification
RFP	Request For Proposal
RFQ	Request For Qualifications
RFV	Request For Variance
RGS	Rigid Galvanized Steel
RL	Re-Insert Line
RM	Room
RMC	Rigid Metallic Conduit
ROM	Rough Order Of Magnitude
RON	Record Of Negotiation
RON	Remain Overnight
ROW	Right Of Way
SAT	Site Acceptance Test
ScTP	Screened Twisted Pair
SD	Schematic Design
SDE	Service Distribution Enclosure
SF	Square Feet
SF	Security Feed
SIDA	Security Identification Display Area
SMBR	Small And Minority Business Resources
SMC	Structured Media Center
SOP	Standard Operating Procedures
SOS	System Optimization Support

III. ACRONYMS (cont)

Acronym	Description
SOW	Scope Of Work
SPD	Surge Protective Device
SPEC	Specification(S)
SQ	Square
SS	Security Shunt
SSCP	Security Screening Checkpoint
SSI	Sensitive Security Information
SSTP	Site Specific Test Plan
STIP	Security Technology Integrated Program
STZ	Security Tracking Zone
SUPPS	Shared Use Passenger Processing System
SV	Schedule Variance
SVS	Secondary Viewing Station
SW	Switch
TAF	Terminal Area Forecast
TC	Timeclock
TCU	Threat Containment Unit
TDMM	Telecommunications Distribution Methods Manual
TES	Thermal Energy Storage Tanks For Both Chilled And Hot Water Systems
TGB	Telecommunications Grounding Busbar
TIA	Telecommunications Industry Association
TMGB	Telecommunications Main Grounding Busbar
TRC	Technical Review Committee
TRR	Test Readiness Review
TSA	Transportation Security Administration
TSM	Transportation Security Manager
TSO	Transportation Security Officer
TV	Television
TX	Texas
TYP	Typical
UG	Underground
UL	Underwriters Laboratories, Inc.
UNO	Unless Noted Otherwise
UPS	Uninterruptible Power Supply
UTIL	Utility
UTP	Unshielded Twisted Pair
V	Voltage / Volts
VA	Volt-Amps
VAC	Variance At Completion
VFD	Variable Frequency Drive
VSU	Vertical Sortation Unit
WAP	Wireless Access Point
WBS	Work Breakdown Structure
WP	Weatherproof
WR	Weather Resistant
XFMR	Transformer

IV. DEFINITIONS

Term	Definition
Airside	All areas beyond TSA screening including SIDA, sterile, secure and restricted areas and including buildings and aircraft operations areas.
Concourse	The post-security portion of the airport that provides space for arriving and departing passengers and includes waiting areas for departing passengers, travel spaces, concessions and other passenger amenities and services
Contractor	The prime contractor employed by AUS or an AUS tenant to construct new facilities or revise existing facilities
Developer / Design Professional	Tenant representative or consultant (typically a licensed architect or engineer) responsible for project design, permitting and ensuring compliance with all applicable codes and regulations
Landside	All areas before TSA screening including the SIDA, Sterile, Secure, and Restricted Areas beyond TSA security
Owner	AUS Staff With Project Decision Authority
Owner’s Representative	DoA P&E staff assigned as liaison between Developer and Owner
PROCORE	Software For Managing Planning And Construction
Record Drawings	Revised drawing set submitted by contractor, reflecting changes to specifications and drawings during construction, and sowing exact dimensions and locations of elements completed
Runway Protection Zone	A trapezoidal area off the end of the runway end that serves to enhance the protection of people and property on the ground in event an aircraft lands or crashes beyond the runway end
Runway Safety Area	A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway
South Terminal	Small AUS terminal located at 10000 logistics lane
Sub / Subcontractor	Contractors (frequently trade-specific) employed by the prime contractor to construct certain portions of a construction project
Tenant	Lease holder representative for space or property at AUS
Terminal	The pre-security portion of the airport that includes ticketing, baggage claim,and all related services for processing arriving and departing passengers.

V. PURPOSE

A. Scope

This Design Standards Manual (DSM) is intended to be followed by all Airport Tenants, Designers, Contractors, and any other stakeholder performing building and/or site improvements at the Austin-Bergstrom International Airport (AUS) including, but not limited to work at terminal, concourse, ancillary buildings, landside , apron, and airfield. International Airport. It is intended to provide general standards for look and feel of projects at AUS and to provide general information regarding the process of completing a project at AUS.

General instructions cannot cover every situation. Specific issues unique to each project will be resolved by working with the AUS Project Manager for design related issues. Prior to any new construction, addition, renovation, modification, or change in use, each project must be submitted to AUS for approval of the concept and/or design for the improvements or modifications. AUS reserves the right to restrict businesses, activities, and operations at its sole discretion. Building, demolition, grading, and/or other permits may be required by the City of Austin, the State of Texas, and other regulatory agencies. No work may proceed until all required permits and necessary approvals have been obtained. It is the sole requirement of the designer to understand the required approval process and to obtain all necessary approvals.

This Design Standards Manual is intended to be a living document. It will be periodically revised and updated to address standards for all areas of design at Austin-Bergstrom International Airport. It is the responsibility of all members of the design and construction team to be familiar with the most recent version of this manual.

Photo Credit: Dan Herron

V. PURPOSE (cont)

B. Audience

The list below identifies the typical audience of the Design Standards Manual and their responsibilities to review and coordinate applicability with AUS PM on specific scope of work and conform to guidelines outlined in this document.

Airport Tenants

Any airport tenant initiating a project to modify the occupied space must review the project intent with AUS and must ensure that the Designer is aware of the requirements in this design standards manual.

Project Design Team

The Project Design Team must be familiar with all aspects of this design standards manual and is responsible to ensure that the design aligns with it.

Contractor and Subcontractor

The Contractor must be familiar with the design standards manual and follow all guidelines related to the construction phase.

Project Management Team

The project management team must be fully familiar with all aspects of the design standards manual and should make recommendations for updates to the manual.

C. Organization

This section provides an overview of the AUS Design Standards Manual organization and provides a short narrative of each section's content.

Administrative

The Administrative section is meant to be an overview of important procedural information regarding the Department of Aviation and vision for AUS. This section also contains information that forms the basis of all design and construction projects within AUS. The contract between the designer and AUS will provide more thorough information.

Technical Design Standards

The Technical Design section provides General Standards for all systems at AUS as well as general CSI Specification standards where applicable. These standards are intended to be used by designers to provide systems, products, and materials important to AUS but does not specify every system, product or material.

Design Principles

The Design Principles section provides information pertaining to all designs at AUS. This section is intended to provide designers with a basis of design to ensure that the DOA and City of Austin's vision and purpose is conveyed throughout AUS. This section will also ensure that the airport maintains a consistent look and feel.

Design Standards

The Design Standards section provides general information for specific parts of the AUS facilities and property. This section is separated into Exterior Improvements, Interior Improvements (Public / Non-Public), and Support/Ancillary Facilities.

Supplemental Appendices

The Supplemental Appendices section provides links to key documents outside the Design Standards Manual.

VII. PROJECT PROCESS

The Following Pages Describe The Process, From Initiation To Completion, For Each Project At AUS

A. Project Initiation

After a Notice to Proceed (NTP) has been issued, each design project at AUS will start with a kickoff meeting scheduled by the AUS Project Manager. The kickoff meeting will be attended by the AUS project manager, AUS Contract Administrator, other key AUS representatives determined by the AUS Project Manager, and key members of the design team including but not limited to the Project Manager, Architect of Record, and Engineers of Record. Kickoff meeting discussions will include project goals, program for design, sustainability goals, project budget, and project schedule. Stakeholder issues and operational considerations impacting the design, the project phasing, and special requirements to maintain service during construction may also be discussed as determined necessary by the AUS Project Manager. The kickoff meeting will also establish lines of communication between the AUS project team and the design team.

The following table is a sample checklist that will be completed by the project team (including designers, contractors, and AUS project management) during the project initiation.

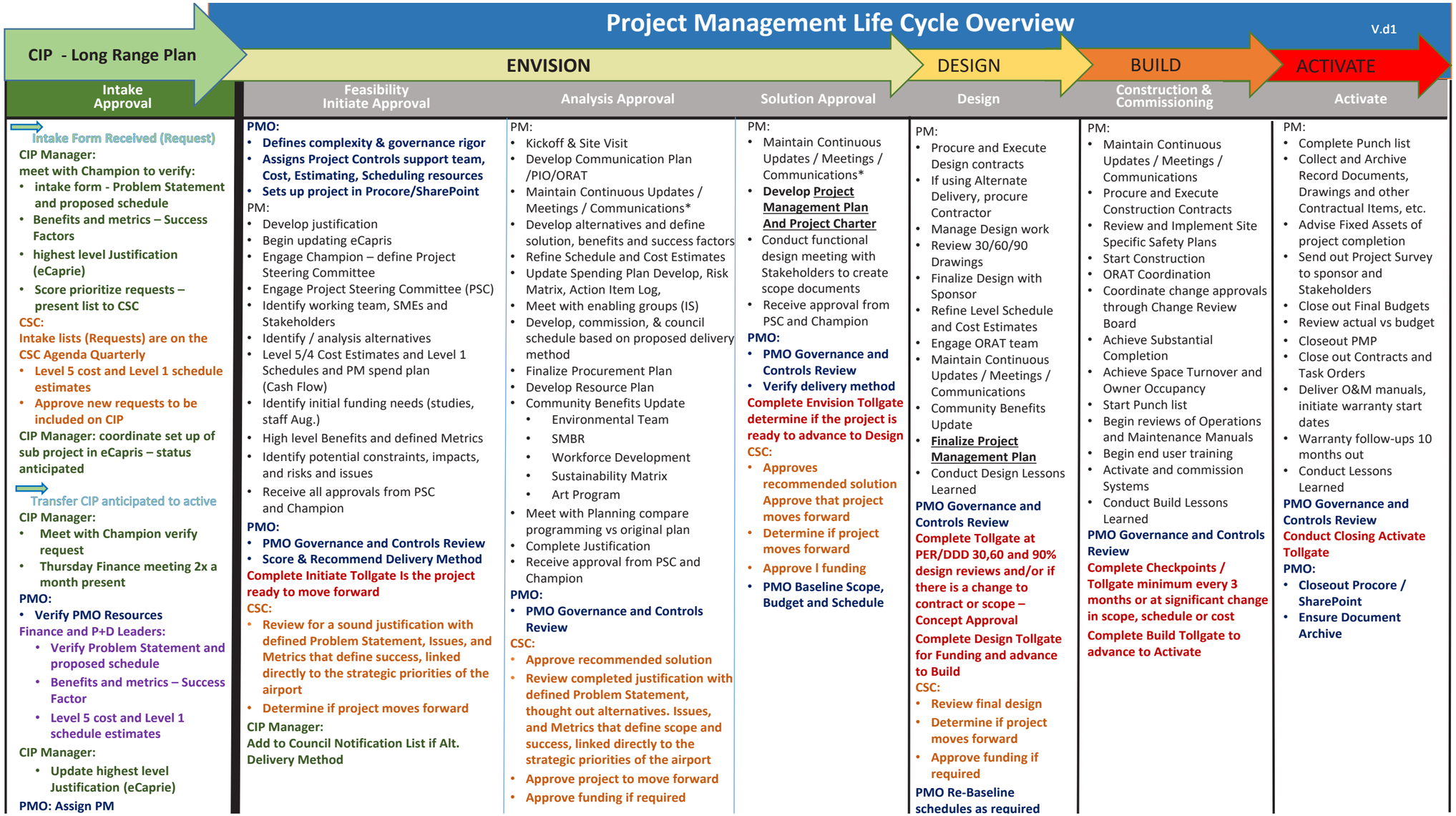
Project Initiation Checklist			
Item	**Description**	**Check**	**Exceptions**

Project Initiation Checklist			
Item	**Description**	**Check**	**Exceptions**

VII. PROJECT PROCESS (cont)

B. Project Management Life Cycle Overview

The Following Diagram Describes The Typical Life Cycle Of A Project At AUS. This Is A Guide For Designers And Contractors To Better Understand The Project Process.



VII. PROJECT PROCESS (cont)

C. Project Submittals

Project Drawings

Project Drawings shall be prepared by or under the supervision of a professional Architect or Engineer licensed in the state of Texas and shall be submitted for AUS at each milestone as required. Sealed drawings shall also be provided to the AHJ as required and to the Contractor for construction. Unless otherwise noted, all submissions will be provided electronically in PDF format.

Project Reports

Project Reports will provide project definition not conveyed in any other document.

Design Calculations

If required by the AHJ Design Calculations shall be prepared by a professional engineer licensed in the state of Texas and shall be submitted for AUS review at each milestone as required. Sealed design calculations shall be provided to the AHJ as required.

Specifications

Specifications shall be prepared by a professional Architect or Engineer licensed in the state of Texas and shall be submitted for AUS review at each milestone as required. Sealed specifications shall be provided to the AHJ as required. Specifications shall be prescriptive in nature. Unless noted elsewhere in this Standard, sole source products and materials shall not be specified. Where sole source products and materials are specified, AUS shall be required to approve any “Or Equal” products and materials.

Construction Phasing

When needed to ensure safety or to maintain proper airport operations during construction, the Designer shall develop a construction phasing plan. This plan will include information regarding construction staging, sequencing, demolition and preparation, and new work at each phase. The construction phasing plan must be well coordinated and developed into the entire project documentation.

D. Project Milestones

Design review submittals are required at Schematic Design (30%), Design Development (60%), Construction Documents (90%), and IFC / Permit Documents (100%) levels of completion. This Design Standard provides specific information on the requirements and level of detail required for each of these submittals.

Schematic Design (30%)

Schematic design documents shall be prepared to sufficient detail to illustrate design intent and system concepts. The documents shall identify all project features such as life safety plans, site plans, aircraft parking plans, architectural floor plans, building elevations, building sections, interior elevations, sections, structural, mechanical, electrical, plumbing, communications security design concepts. The documents shall be sufficiently developed to produce a rough order of magnitude cost estimate.

Design Development (60%)

Design development documents will further develop the approved schematic design documents and shall be prepared to sufficient detail to define the proposed character, materials, and scope of the project. These documents shall include overall dimensions, code requirements, spot elevations and dimensions of existing and proposed elements. The documents should include sufficient detail from all disciplines involved including civil, architecture, structural, life safety, fire protection, plumbing, mechanical, electrical, fire alarm, communications, security equipment, and any other disciplines necessary for the project to develop and refine a valid cost estimate.

Construction Documents (90%)

Construction documents will continue the development of the approved design development documents and shall be prepared to sufficient detail to properly execute and complete the construction work. These documents will provide a final review opportunity prior to solicitation of construction bids. The documents should include complete detail from all disciplines involved including civil, architecture, structural, life safety, fire protection, plumbing, mechanical, electrical, fire alarm, communications, security equipment, and any other disciplines necessary for the project to develop and refine a final cost estimate.

IFC / Permit Documents (100%)

IFC / Permit documents will finalize the design process and will incorporate all review comments made previously. These documents will be used by AUS to solicit construction bids and to properly execute and complete the construction work. The documents should include complete detail from all disciplines involved including civil, architecture, structural, life safety, fire protection, plumbing, mechanical, electrical, fire alarm, communications, security equipment, and any other disciplines necessary for the bidding, permitting, and construction. All documents shall be signed and sealed by a professional according to AHJ requirements.

VII. PROJECT PROCESS (cont)

E. Coordination of Design

The prime design professional shall coordinate the services and work provided by the project design team and shall have primary responsibility of the program and processes utilized to eliminate any conflicts and inconsistencies within the final design packages prepared by the design team. The following checklists shall be used to ensure each deliverable has been reviewed and coordinated.

Photo Credit: Loren Litner

VII. PROJECT PROCESS (cont)

F. Project Review:

Schematic Design

Submittal Requirements	%	N/A	Y	N
General, Codes, Zoning	**15%**			
Determine Sustainability Goals and applicable verification method. Envision, LEED; AEGB, WELL, etc. Then choose the appropriate verification tool and specific goals for project.	40%			
Area Tabulation	80%			
Code Analysis (Small Scale Plans)	60%			
Construction classification, building area/height limitations, occupancy use and load (including multiple and special uses) and egress capacity.				
Site (ADA) accessibility, property line restrictions, structural seismic requirements and importance factor to be used, means of egress, energy code requirements, local code issues, travel distance restrictions, horizontal exits, smoke control/evacuation requirements, plumbing fixture count review.				
Zoning Analysis (Land Use Restrictions), local site requirements	100%			
Site Demolition, Civil, Landscape				
Site Plans	15%			
Show location of all buildings, roads, parking, landscape elements, property lines	35%			
Accessible routes through the site and to the building	15%			
Clear delineation of easements, project limit lines, road, or lane closures	25%			
Preliminary spot elevations	35%			
Existing and proposed utilities noted	25%			

Submittal Requirements	%	N/A	Y	N
Existing and to be removed trees, protected trees, new vegetation, sod or seeding	25%			
Site drainage, storm water removal and/or detention and retention areas noted	10%			
Identify and show the required number of parking spaces per local code & zoning requirements	80%			
Provisions for trash disposal and removal by truck dock, compactor, etc.	10%			
Conformance to zoning restrictions for easements and setbacks, etc.	25%			
Show site related sustainable design strategies and features	20%			
Show retaining walls if required and note type proposed	30%			
Show general site demolition and areas requiring protection.	50%			
Site Survey (including utilities and all use limitations)	100%			
Site Geotechnical Information (soil and boring survey results)	100%			
Environmental Impact Surveys or other regulatory reviews as required.	100%			
Demolition, Architectural, Interior Design				
Building and Selective Demolition Plans	50%			
General and selective building demolition with areas requiring protection should be shown. Indicate above and below grade demolition. Note the type of construction to be demolished i.e., “brick veneer on metal studs” or “wood framed building with concrete basement walls and slab” major demolition on a separate plan(s)				

VII. PROJECT PROCESS (cont)

F. Project Review (cont)

Schematic Design (cont)

Submittal Requirements	%	N/A	Y	N
Architectural Floor Plans	25%			
Show structural grid, vertical circulation elements, core elements, vertical shafts, interior partitions, door and window locations, floor elevations, room names, overall and key dimensions, bay sizes, accessible routes through the building				
Show sustainable design features, such as, recycling room(s), staff showers, etc., as appropriate	25%			
Architectural Roof Plans	25%			
Show structural grid, roof material, equipment, preliminary slope and drain locations, expansion joints				
Show sustainable and special design features such as area(s) of vegetated roof, solar arrays, etc., as appropriate				
Principal Building Elevations & Sections	25%			
Material indications, extent of glazing and mullion spacing, shading devices, floor, roof and top of parapet lines, with dimensions	25%			
Below grade structure shown dashed in. Finished grades clearly shown.				
Building Sections (longitudinal and transverse)	25%			
Wall Sections (typical sections)	15%			
Schedules & Analysis	25%			
Preliminary Finish Schedule (typical areas, lobbies, etc.)	15%			
Equipment Schedules and Brochures	10%			
Statement of Probable Cost based on SF and special design areas	15%			
Major Materials (selection and description in CSI format) including materials and high recycled content materials	15%			
Analysis of Compatibility with Site Analysis / Selection	100%			

Submittal Requirements	%	N/A	Y	N
Analysis of Life Cycle Costs (methodology and assumptions to be indicated)	10%			
Massing Study Model, 3D Computer Model	80%			
Image Statement, Renderings, and Presentation Media (if contracted)	15%			
Structural (See the HNTB Struct. Dept. Design Milestone List)	10%			
Structural				
Systems Narrative of Typical Structural System	100%			
Include verification that loads of sustainable design features are accommodated, as well as MEP equipment loads or assumptions, architectural load assumptions, live and dead load criteria to be used in different areas of the facility	100%			
Written confirmation from the Owner that the building importance factor, vibration and disproportionate collapse and/or blast design requirements are correct, based on actual use of the building and the building code.	100%			
Demolition narrative of structural items to be removed	50%			
Floor and Roof Framing Plan (single line drawings with typical bay and member sizes noted)	100%			
Preliminary lateral load analysis and design description	100%			
Description of Foundation System based on soils report	100%			
Alternate framing to be considered	100%			
Typical Frame Structural System Depth with deflection and wind loads considered	50%			
Typical Bay Sizes / Column Grid	100%			
Floor to Floor Heights and Foundation Depths	100%			

VII. PROJECT PROCESS (cont)

F. Project Review (cont)

Schematic Design (cont)

Submittal Requirements	%	N/A	Y	N
Statement of Probable Cost	15%			
Mechanical/Plumbing				
Mechanical and Plumbing Systems Narrative	100% SD			
Demolition narrative of HVAC and plumbing systems to be removed	50%			
Mechanical and Plumbing Design Criteria and Assumptions	100% SD			
HVAC narrative including U factors, temperature ranges, air changes, chillers' humidity control, natural ventilation, building management system, water supply/sanitary systems, etc., security at louvers				
Energy Source(s) Identified, proposed envelope review	100%			
Mechanical rooms sized and located on architectural drawings	100%			
Vertical shafts and risers sized and located on architectural drawings	100%			
Special Features Noted – i.e. elevator machine rooms, UPS room, geothermal and grey water systems, raised floor air distribution systems, economizers, etc.	100%			
Plumbing Fixture Counts (complying with code and program) including drinking fountains, lavatories, toilets and urinals	100%			
Review of plumbing chase widths on arch drawings	100%			
Cooling Tower Location or alternate locations (shown on elevations, roof or site plans)	100%			
Review of mech space access and equipment removal/replacement	100%			
Fire Protection Codes and Standards	100%			
Fire Alarm and Suppression System Description	100%			

Submittal Requirements	%	N/A	Y	N
HVAC System Space Requirements / Plenum Zones Dimensions (Heights – coordinated with other disciplines)	100%			
Describe rooms with special 24/7 cooling, such as elevator machine rooms, data rooms, etc.	35%			
Review and adjustment of LEED strategies	35%			
Statement of Probable Cost for plumbing, HVAC and controls	15%			
Preliminary equipment weights given to structure engineer	30%			
Electrical (See BMS and Energy Deliverables Below)				
Electrical Design Criteria and Assumptions including preliminary loads, average watts per SF, lighting levels to be attained, preliminary transformer, generator and system on emergency power, grounding system	100%			
Power Systems Narrative grounding, lightning protection, metering concepts, basic electrical work, underground or overhead feeders. Availability of electricity, availably of green power, local power redundancy and reliability of local power form the local utility, UPS if applicable, switchgear and transformer types proposed, potential for solar power, Primary distribution concepts	75%			
Lighting and Lighting Control Systems Narrative of lighting design concepts, light levels to be attained, control types, lamp types, temperature/color and life, lighting at food venues, general light level requirements, lighting design aesthetic concepts, fixture types, watts/SF, controls, daylighting control, maintenance	75%			
Space Requirements for Substations Transformers, Switchgear and Generators (sized and located on architectural plans). Locate service entrance and required entrance conduit protection	75%			
Demolition narrative of electrical systems to be removed	50%			
Telecom (TR) and Electrical Rooms (sized and located on architectural plans). Give approximate cooling loads of these rooms. Describe voltage(s) to be used for each anticipated system, number and whether feeders are overhead or underground. Specific description of items to be served by emergency power and describe any requirements for special areas	80%			
Review and adjustment of LEED strategies options and recommendations including on-site power generation and renewable energy	35%			

VII. PROJECT PROCESS (cont)

F. Project Review (cont)

Schematic Design (cont)

Submittal Requirements	%	N/A	Y	N
One-Line Plans or Other Documentation (as appropriate)	100 SD			
General initial list of items to be controlled on the BMS system.				
Energy Report / Model				
Life Costing Methodology Description	25%			
Description of Major Energy Conservation Assumptions	25%			
• LEED/Energy Code/ and ASHRAE requirements				
• Building envelope assumptions				
• Air Barrier and insulation types				
• Below slab and foundation insulation assumptions				
• Thermal Bridging Issues, if any				
• Types of fenestration and percent of gross wall area				
• Type of air handling / distribution systems, reheat system, economizers, etc				
• Automatic BMS control features and Daylighting Control Systems, if any				
• Lighting and lighting control system integration/capabilities for energy savings				
• Operational considerations for energy savings				
Life Cycle Cost Analysis and Energy Conservation Measure Recommendations	50%			
(furnish an energy report consisting of calculations including any computer program analysis, and a written summary of the results clearly stating assumptions made, alternatives, fuel price escalation and impacts on other disciplines). With the architect, describe how the predicted results will be attained.				
• Total monthly and annual energy consumption (BTUs)				

Submittal Requirements	%	N/A	Y	N
Description of Unusual System Requirements / Recommendations	50%			
Preliminary equipment weights given to structure engineer	30%			
Statement of Probable Cost for electrical design systems	30%			
Building Management System				
BMS Criteria and Recommendations Narrative	100% SD			
Address compatibility with existing BMS system if applicable				
• Energy consumption per month by energy type. Including maximum demand per month				
• Annual energy consumption (BTU/GSF/Year) per building system, i.e. lighting, power, HVAC, domestic hot water, equipment efficiency vs. first and live cycle costs, etc.				
• Alternative recommendations				
• Energy budget determination; energy saving strategies, first cost differential and cost benefits				
• Annual energy consumption per gross SF of building				
Statements of Probable Cost	**15%**			
Estimate of Probable Costs (verify inclusion of elements by cross-checking against outline specification table of contents for omissions and compare with budget) List components that are below or under the initial budget assumptions	15%			
List square footage of the project in conjunction with the architect	100%			
List a breakdown of site cost components, listing assumptions and risks	15%			
List recent comparable similar projects and adjust for location cost variations	100%			
Identify Escalation Factors to Mid-Point of Construction	100%			

VII. PROJECT PROCESS (cont)

F. Project Review (cont)

Design Development

Submittal Requirements	%	N/A	Y	N
Identify Contingency Allowance for both Design and Construction. List other assumptions	100%			
Estimate Construction Period (identify any phased work and any lead time for special items)	50%			
Determine and list what equipment and other items will be provided by the Owner and who will install these and reflect these issues in the cost statement	50%			
List assumptions for general conditions and special conditions, including contract overhead and profit, (A/E fees and land acquisition if appropriate), profit, insurance, bonds, permitting, and other soft costs	25%			
Identify Sole Source Providers (and justify their use)	15%			
Provide Life Cycle Cost Analysis of Proposed Roofing System if required	25%			
Area Tabulation – Gross to Net SF, other ratios as required	50%			
Provide cost information for alternates, if any, construction andcosts/risks associated with them, recommending a construction contingency based on unknowns and project complexity.	15%			
Sustainable Design				
Verify documentation of sustainable strategies				
Sheet Index				
General				
Area Tabulation	100%			
Code Analysis	100%			
Zoning Analysis	100%			
Phasing and Sequencing Plans	90%			

Submittal Requirements	%	N/A	Y	N
Civil, Landscape				
Site Plans	90%			
Civil Plans	90%			
Civil Details / Sections	30%			
Landscaping Plans	90%			
Landscaping Details	20%			
Planting Schedule	100%			
Site Details	25%			
Site Survey, (with Disclaimer) and all use limitations	100%			
Site Geotechnical Information (with Disclaimer)	100%			
Life Safety				
Code Analysis, Variances/Code Modification Requests, Occupant Loads, Const. Type, Exterior Exit Capacities, System Ratings, etc.	100%			
Architectural, Interior Design				
General Notes, Arch. Symbols and Legends, Partition Types, etc.	80%			
Demolition Plans	70%			
Existing to Remain Plans (LEED projects only)	70%			
Demolition Details	25%			

VII. PROJECT PROCESS (cont)

F. Project Review (cont)

Design Development (cont)

Submittal Requirements	%	N/A	Y	N
Architectural Floor Plans	90%			
Roof Plan	90%			
Reflected Ceiling Plans	90%			
Building Elevations	95%			
Building Sections	95%			
Wall Sections	80%			
Large Scale Views	50%			
Exterior Details	25%			
Interior Details	25%			
Interior Elevations	80%			
Details/Door and Window Schedules	50%			
Door and Window Details	25%			
Finish Schedule, color boards	95%			
Equipment Schedules and Brochures				
Statement of Probable Cost				
Specifications /Project Manual	70%			
Incorporate Commissioning Requirements	70%			

Submittal Requirements	%	N/A	Y	N
Structural				
General Notes / Information				
Foundation Plans				
Framing Plans				
Location and size of all openings				
Elevations of critical frames / members				
Structural Sections/Details				
Schedules				
Specifications				
Plumbing				
General Notes / Information	75%			
Site Utilities Plan (if not by Civil Engineer)				
Floor Plans – Plumbing	75%			
Flow Riser Diagram Piping Schematics	50%			
Piping Schematics	50%			
Special Systems	50%			
Schedules	75%			

VII. PROJECT PROCESS (cont)

F. Project Review (cont)

Design Development (cont)

Submittal Requirements	%	N/A	Y	N
Details	75%			
Specifications	75%			
Calculations	75%			
Incorporate Commissioning Requirements	50%			
Mechanical				
General Notes / Information	75%			
Site Utilities Plan (if not by Civil Engineer)				
Floor Plans	75%			
Ceiling Plans	50%			
Enlarged Plans and Elevations	75%			
Control System	50%			
Riser Diagrams	50%			
Schedules	65%			
Details	75%			
Specifications	75%			
Calculations	65%			
Incorporate Commissioning Requirements	50%			

Submittal Requirements	%	N/A	Y	N
Hydronics				
Electrical				
General Notes / Information	75%			
Site Utilities Plan	75%			
Power Plans	65%			
Lighting Plans	65%			
Lighting Controls Schedule				
Special Systems Plans	50%			
Phone, data, fire alarm, smoke detection, security, CCTV, wireless, etc.				
Enlarged Plans and Elevations	65%			
One-line Diagrams	65%			
Schedules				

VI. PROJECT PROCESS (cont)

F. Project Review (cont)

Construction Documents

Submittal Requirements	%	N/A	Y	N
Details	75%			
Specifications	75%			
Calculations	65%			
Incorporate Commissioning Requirements	50%			
Telecommunications				
Diagrams / General Information				
Data Plan				
Telephone Plans				
Terminal Room Plan and Elevations				
Schedule / Details				
Security				
Diagrams / General Information				
Data Plan				
Audio Visual / Vertical Transportation / Food Service (TBD)				
List Those Deliverables As Contracted				
Sustainable Design				
Verify Documentation Of Sustainable Strategies				

Submittal Requirements	%	N/A	Y	N
Verify Compliance With Commissioning Plan				
Sheet Index				
General				
Area Tabulation				
Code Analysis				
Zoning Analysis				
Phasing and Sequencing Plans				
Civil, Landscape				
Site Plans				
Civil Plans				
Civil Details / Sections				
Landscaping Plans				
Landscaping Details				
Planting Schedule				
Site Details				
Site Survey, (with Disclaimer)				
Site Geotechnical Information (with Disclaimer)				
Life Safety				

VI. PROJECT PROCESS (cont)

F. Project Review (cont)

Construction Documents (cont)

Submittal Requirements	%	N/A	Y	N
Code Analysis, Variances/Code Modification Requests, Occupant Loads, Const. Type, Exterior Exit Capacities, System Ratings, Etc.				
Architectural, Interior Design				
General Notes, Arch. Symbols and Legends, Partition Types, Etc.				
Demolition Plans				
Existing to Remain Plans (LEED projects only)				
Demolition Details				
Architectural Floor Plans				
Roof Plan				
Reflected Ceiling Plans				
Building Elevations				
Building Sections				
Wall Sections				
Large Scale Views				
Exterior Details				
Interior Details				
Interior Elevations				
Details/Door and Window Schedules				
Door and Window Details				

Submittal Requirements	%	N/A	Y	N
Finish Schedule, Color Boards				
Equipment Schedules and Brochures				
Statement of Probable Cost				
Specifications /Project Manual				
Incorporate Commissioning Requirements				
Structural				
General Notes / Information				
Foundation Plans				
Framing Plans				
Location and size of all openings				
Elevations of critical frames / members				
Structural Sections/Details				
Schedules				
Specifications				
Calculations				
Special Inspection Requirements	100%			
Plumbing				

VI. PROJECT PROCESS (cont)

F. Project Review (cont)

Construction Documents (cont)

Submittal Requirements	%	N/A	Y	N
General Notes / Information				
Site Utilities Plan (if not by Civil Engineer)				
Floor Plans – Plumbing				
Flow Riser Diagram Piping Schematics				
Piping Schematics				
Special Systems				
Schedules				
Details				
Specifications				
Calculations				
Incorporate Commissioning Requirements				
Mechanical				
General Notes / Information				
Site Utilities Plan				
Floor Plans				
Ceiling Plans				
Enlarged Plans and Elevations				

Submittal Requirements	%	N/A	Y	N
Control System				
Riser Diagrams				
Schedules				
Details				
Specifications				
Calculations				
Incorporate Commissioning Requirements				
General Notes / Information				
Special Systems Plans				
Telecommunications				
Diagrams / General Information				
Data Plan				
Telephone Plans				
IDF/MDF Plan and Elevations				
Schedule / Details				

DESIGN PRINCIPLES

V. MOOD BOARD

A. Campus-Wide Look and Feel

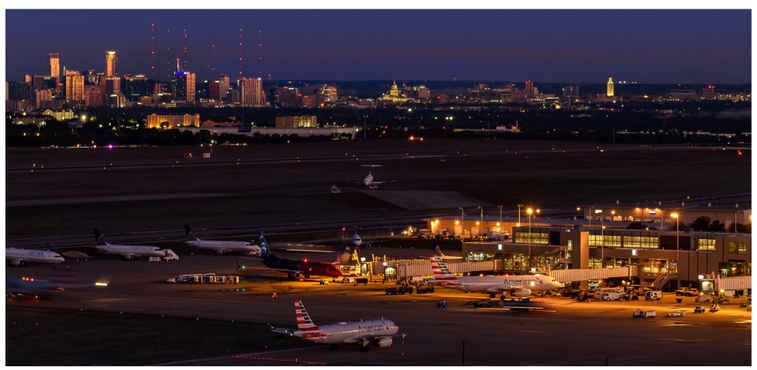
Since its initial opening in 1999, Austin-Bergstrom International Airport (AUS) has quickly grown into a destination airport. In its capacity as one of the primary gateways into the vibrant, dynamic, and welcoming city of Austin, the airport should reflect the character of the city and its people. Austin is a diverse community of people with widely varying interests, ideals, talents, backgrounds, and cultures.

Austin is one of the nation's leading high-tech hubs with a technology-savvy workforce, but Austin is also an artistic community full of expression. Austin is the capital of Texas and replete with political activity, but Austin is also open-minded and accepting. Austin is a bustling beehive of activity, yet also easy-going and laid-back. Austin is cultured and cutting edge, but simultaneously folksy and old-fashioned. Austin changes and grows and rapidly becomes new in myriad ways, all while holding on tenaciously to much of its roots and what made Austin special to those who call it home.

The region is populated with indigenous plant and animal communities that are as diverse and unique as the people who call it home, and Austin's desire to protect those communities is reflected in the city's stature as a leader in environmental stewardship.

The airport, in expressing Austin, is a microcosm of all this – of all that makes up Austin. The Barbara Jordan Terminal building was designed to be reminiscent of historical local architecture – utilizing warm and inviting natural materials – while also representing the city's rapidly growing modern aesthetic. Within the terminal, the city's culturally diverse artists and artisans offer images of the local landscape, culture, and history with their place-making art and the architectural detailing. "The Live Music Capital of the World" sings forth from the sound system and from a centrally located live music stage. The ongoing program of performing artists and rotating exhibitions keeps the Austin story strikingly in present time.

All of this should be top-of-mind when envisioning, designing, and constructing elements that serve to make up the terminal and other aspects of AUS. The airport is often the first and last impression of Austin for its visitors. Conveying the personality of Austin in the airport's facilities is essential.



Austin-Bergstrom International Airport

IX. SUSTAINABILITY

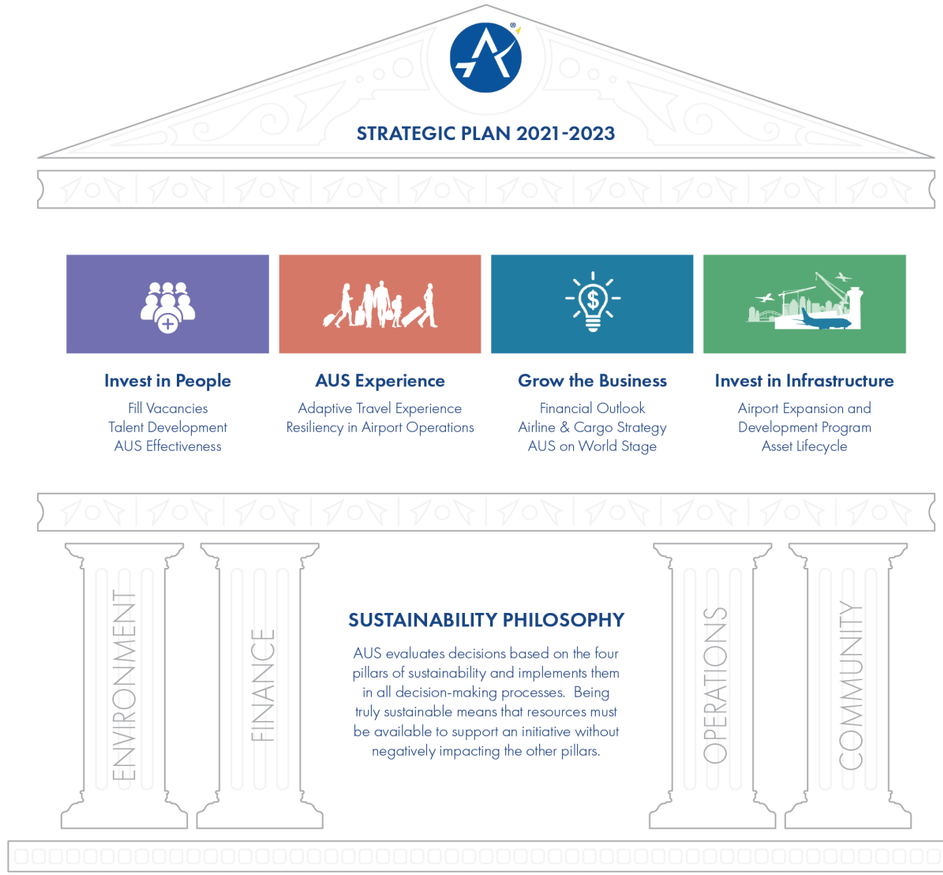
Sustainable practices mitigate negative environmental impacts by reducing the use of raw or material resources (materials, fossil fuels, energy consumption, etc.), reducing emissions, waste, and water pollution, mitigating increased flooding from stormwater runoff, and providing other environmental benefits.

Thoughtful and early planning to incorporate sustainable practices into every program, project and operation at AUS helps to reduce impacts and often results in financial and operational benefits. There are opportunities for applying principles of sustainability in all areas of airport operations - airside, landside, terminals, and hangars, just to name a few. New buildings, runways and taxiways, and maintenance facilities should be designed with sustainable principles in mind. Sustainability can also be applied as a component of retrofit and repair activities. The most beneficial opportunities for employing sustainable principles are during the initial planning and design phases of an airport development project, but there may be even more opportunities to consider in facility replacement and maintenance.

Historically, AUS has evaluated decisions based on the four pillars of sustainability (shown at right) and implements them in all decision-making processes. Being truly sustainable means that resources must be available to support an initiative without negatively impacting the other pillars. The pillars are environment, finance, operations, and community.

Sustainability goals at AUS are principally guided by the City of Austin's goals, plans and programs. AUS supports and furthers the City's sustainability efforts and commitments, including that of becoming a net-zero community by 2040. AUS staff works closely with the City to ensure that efforts at the Airport align with and support

the sustainable policies and initiatives in place at the city level. The COA monitors day-to-day municipal operations, including those at AUS, and evaluates the performance of operations using a set of key performance indicators to determine whether targets set for specific issues (carbon emissions, economic, operational, green building, energy, zero waste, etc.) are being met. AUS tracks and reports performance indicators driven by City policies. The Airport also reports global reporting initiative (GRI) performance measures in its annual Sustainability Report.



In addition to the Airport's partnership with the broader City of Austin, some of the other partnerships key to AUS's efforts include those with Austin Energy, Signature Flight, Keep Austin Fed, Clean Energy, and major airlines. Sustainability initiatives have led to energy efficient retrofits, electric ground vehicles, transition to renewable natural gas, use of alternative fuels including sustainable aviation fuel, strides in composting and recycling, and purchases of renewable energy and carbon off-sets from sustainable sources. AUS has made strides in the use of reclaimed water, saving millions of gallons of potable water, and has partnered with airlines to support electric-powered airline ground service equipment. The Airport has also received LEED Green Building certifications or Austin Energy Green Building ratings on multiple airport buildings.

This focus on sustainability and resiliency efforts to address climate change will be central as the AEDP is designed and once operational. AUS is committed to incorporating sustainability into all facets of the project and is in the process of setting specific goals for the design and construction teams. While there are many great sustainability programs and efforts at AUS, there is not an overarching sustainability master plan at this time. Thus, AUS is currently using a "ground-up" approach to ensure sustainable practices are incorporated into all of its projects and programs. Along with the City's sustainability goals that AUS adheres to with each of its projects and programs, sustainability goals are uniquely established during the planning and design phases by project or program at this time.

DESIGN STANDARDS

I. EXTERIOR IMPROVEMENTS

A. General Site Design Requirements

The goal of all AUS site design should be the safety and well being of all passengers, guests, employees and any other occupants of the airport. The following standards should be followed by the site designer. Designers must follow the most recent Texas Department of Transportation, City of Austin, FAA and all other relevant requirements. It is the sole responsibility of the designer to understand and comply with these requirements.

Environmental

The intent of the Environmental Design Standards is to establish a minimum set of environmental standards for AUS facility design and construction projects that coordinate and augment the City of Austin and governing agencies.

Contaminated Soils

If contaminated soil is suspected, it must be tested and characterized to determine proper disposal. If it contains constituents considered harmful to health, equipment, property, or the environment from a regulatory perspective, it must be handled as hazardous waste.

Spill Prevention

Facilities may be subject to Spill Prevention, Control and Countermeasure (SPCC) regulations at 40 CFR 112. The design of any new or renovated facility must include a submittal by the Designer with a formal determination as to whether an SPCC plan is required; and if so, the design must incorporate the measures specified at 40 CFR 112 or any subsequent applicable federal or state regulation. It is the sole responsibility of the Designer to understand these requirements.

Construction Equipment Emissions Reduction

All construction projects will follow the AUS sustainability requirements. The designer must be familiar with the sustainability requirements and properly convey those requirements in the design documents. The sustainability requirements are available an appendix of this manual.

Construction and Demolition Waste Management

All construction projects will follow the AUS sustainability requirements. The designer must be familiar with the sustainability requirements and properly convey those requirements in the design documents. The sustainability requirements are available an appendix of this manual.

Site Development Codes and Ordinances

As modifed by the airport development ordinance, the local City of Austin codes that govern site development design and construction include:

1. **Current City of Austin Codes and Ordinances**
   a. Land Development Code

2. **Current City of Austin Technical Manuals**
   a. Drainage Criteria Manual
   b. Environmental Criteria Manual
   c. Land Development Code
   d. Standard Specifcations Manual
   e. Standards Manual
   f. Utilities Criteria Manual

Links for City Of Austin Standards

City of Austin Land Development Code -
https://library.municode.com/tx/austin/codes/land_development_code

City of Austin Standard Specifications -
https://library.municode.com/tx/austin/codes/standard_specifications_manual

City of Austin Environmental Criteria Manual -
https://library.municode.com/tx/austin/codes/environmental_criteria_manual

City of Austin Standard Specifications -
https://library.municode.com/tx/austin/codes/standard_specifications_manual

City of Austin Standards Manual -
https://library.municode.com/tx/austin/codes/standards_manual

City of Austin Utilities Criteria Manual -
https://library.municode.com/tx/austin/codes/utilities_criteria_manual

I. EXTERIOR IMPROVEMENTS (cont)

A. General Site Design Requirements (cont)

Utilities

Utility Corridors

Where utilities are owned and operated by separate utility providers on AUS property, Utility Corridors are defined that allow the providers to access and maintain their infrastructure. Generally, no easements are granted on AUS property since the Utility Corridors serve the same purpose. Utility Corridors are only provided for those utilities owned and operated by the utility providers, while private services connections downstream of meters and any airport owned utilities are not required to be located in Utility Corridors.

Utility Corridors should be planned efficiently by grouping utilities in parallel where practical to minimize the number and size of the corridors. At least seven feet of separation from the outer edge of a utility line to the boundary of a Utility Corridor shall be provided, with additional separation provided as needed for deep bury installations and other situations that require additional space for maintenance and repair of the utility lines and appurtenances.

Potable Water

Potable water is supplied by Austin Water to AUS via distribution facilities typically owned, maintained, and operated by Austin Water upstream of all meters. Austin Water infrastructure on AUS property shall be located within defined Utility Corridors.

All design and construction of potable water infrastructure shall conform to the latest edition of the Austin Water Utilities Criteria Manual, (https://library.municode.com/tx/austin/codes/utilities_criteria_manual) the City of Austin Standard Specifications, (https://library.municode.com/tx/austin/codes/standard_specifications_manual) the City of Austin Standard Details, (https://library.municode.com/tx/austin/codes/standards_manual) and the Austin Water Standard Products Lists. (https://www.austintexas.gov/page/current-standard-products-lists) For installations of new mains, the design must be approved through Austin Water's Service Extension Request process, and Austin Water development review and approval is required for the potable water designs. Sizing of potable water infrastructure shall typically be sized for future growth at AUS as guided by the Utility Area Plan on preliminary planning for sizing.

Fire hydrants and fire protection service are provided via the potable water system at AUS. Fire hydrant locations and spacing shall be per current Austin Water standards and approved through the site development review process for the City of Austin.

Wastewater

Wastewater service is provided by Austin Water to AUS via wastewater facilities typically owned, maintained, and operated by Austin Water downstream of service connections. Austin Water wastewater infrastructure on AUS property shall be located within defined Utility Corridors.

All design and construction of wastewater infrastructure shall conform to the latest edition of the Austin Water Utilities Criteria Manual, (https://library.municode.com/tx/austin/codes/utilities_criteria_manual) the City of Austin Standard Specifications, (https://library.municode.com/tx/austin/codes/standard_specifications_manual) the City of Austin Standard Details, (https://library.municode.com/tx/austin/codes/standards_manual) and the Austin Water Standard Products Lists. (https://www.austintexas.gov/page/current-standard-products-lists) For installation of new facilities , the design must be approved through Austin Water's Service Extension Request process, and Austin Water development review and approval is required for the wastewater designs. Sizing of wastewater infrastructure shall typically be sized for future growth at AUS as guided by the Utility Area Plan on preliminary planning for sizing.

Reclaimed Water

Reclaimed water is supplied by Austin Water to AUS via distribution facilities typically owned, maintained, and operated by Austin Water upstream of all meters. Per current City of Austin Ordinances, reclaimed water is anticipated to be provided to serve irrigation and toilet flushing at new buildings. Austin Water reclaimed water infrastructure on AUS property shall be located within defined Utility Corridors.

All design and construction of reclaimed water infrastructure shall conform to the latest edition of the Austin Water Utilities Criteria Manual, (https://library.municode.com/tx/austin/codes/utilities_criteria_manual) the City of Austin Standard Specificatio ns, (https://library.municode.com/tx/austin/codes/standard_specifications_manual) the City of Austin Standard Details,(https://library.municode.com/tx/austin/codes/standards_manual) and the Austin Water Standard Products Lists. (https://www.austintexas.gov/page/current-standard-products-lists) For installations of new mains, the design must be approved through Austin Water's Service Extension Request process, and Austin Water development review and approval is required for the reclaimed water designs. Sizing of reclaimed water infrastructure shall typically be sized for future growth at AUS as practical, refer to the Utility Area Plan for additional information on preliminary planning for sizing.

Electrical

Electrical power is provided by Austin Energy (AE) to the majority of AUS facilities via the AE Bergstrom Substation and the AE Stony Ridge Substation. The Bergstrom Substation provides the majority of this power to the existing BJT, CUP, and surrounding facilities via 12kV circuits BE-1 and BE-4. Many of the facilities south of Taxiways H and G, such as the general aviation facilities, receive power from the AE Stony Ridge Substation. The remaining facilities in and around AUS receive power from local AE 12kV circuits from Stony Ridge or other AE substations, depending on location.

The 12kV circuits, ductbank, manholes, and switchgear are owned operate and maintained by AE. AUS takes ownership of electrical power on the secondary of the AE 12kV-480V step-down transformers, located at each facility.

All design and construction of AE electrical infrastructure shall conform to the most recent edition of the Austin Energy Design Criteria. All AE infrastructure is assumed to be sized, routed, and otherwise designed by and in accordance with Austin Energy, whether installed by the utility company or a third-party contractor hired by AUS.

AUS is currently coordinating with AE to adjust the distribution strategy at the airport such that AUS takes ownership of the 12kV infrastructure downstream of the AE Substations, excluding the ductbank that will provide power to the AUS owned substation. The decision regarding this transition has not yet been finalized, with coordination at AUS and between AUS and AE regarding this topic presently occurring.

In the event the 12kV infrastructure, also referred to as primary distribution, is agreed upon by both parties to become AUS owned, then the airport will need to develop system standards, specifications, and design manuals to describe how the 12kV infrastructure should be designed and constructed. As a baseline, it should follow the AE system standards. Modifications should made with respect to airport specific areas, such as the airfield, and as recommended by industry standard practice for a non-utility entity.

I. EXTERIOR IMPROVEMENTS (cont)

A. General Site Design Requirements (cont)

Electrical (cont)

The following general guidelines for medium-voltage should be followed for 12kV infrastructure that AUS may own in the future:

- Ductbank should be concrete, rebar enforced, with a 4/0 bare SD copper ground conductor between manholes. Ductbank shall have no less than 2’ of backfill above the top of the ductbank unless beneath a roads, taxiways, or runways, in which case a minimum of 3’ backfill shall be required.
- Minimum 6” Conduits shall be used, type Schedule 40 PVC Conduit when in ductbank and RGS when travelling along an exposed cable racks. Schedule 80 PVC shall be used in ductbanks beneath roads, taxiways, runways, or at other locations where a higher degree of physical disturbances may occur. Maximum conduit fill should be no greater than 40% per the NEC.
- Medium Voltage Cables shall be type MV 105 EPR, Copper, Compact-round concentric-lay Class B, with EPR Insulation that has a voltage rating of no less than 15kV, is 133% insulated, is shielded by a 5-mil uncoated copper tape that goes over a semiconducting insulation shield and having a Chlorinate Polyethylene Cable Jacket. Cables shall comply with UL 1072, AEIC CS8, ICEA S-93-639 or NEMA WC 74, and ICEA S-97-682. Certain parameter may be adjusted as standards are developed by AUS.
- Cable Pulling Manholes shall be of size 11’x9’x9’ at minimum and Cable Splicing Manholes shall be of size 13’x11’x9’ at minimum, including 6” manhole walls. Large vaults beneath sectionalizing switchgear should be sized based on the type of equipment that will be installed atop the vault but can be up to 25’x9’x9’. Manholes should have all conducting components grounded to a grounding electrode at the bottom of the manhole. Provisions for Sump Pump drainage should also be provided. A compacted base should be provided beneath each manhole using adequate backfill material, such as crushed gravel. Manhole foldouts shall be produced at the design stage and following construction.
- Redundant feeder pairs shall be provided to each new facility fed by AUS from either sides of a single AUS substation switchgear or from separate substation switchgear, depending on facility location and the space available on all AUS substation at the time of construction.
- Exterior medium-voltage transformers shall be pad-mounted and liquid-filled 12,47kV Delta – 480Y/277 Volt. The insulating liquid shall be silicone-based or a hydrocarbon mineral oil dielectric that is UL listed. Self-Cooled with an insulation temperature rise of 65 deg C and a BIL of 95kV. Taps at 2.5% above and below shall be provided and the impedance shall be no greater than 5.75%. Provisions for Forced-Air and Ambient Air shall be provided. Sound level rating shall be no greater than 3 dB in noise-sensitive areas.
- Interior medium-voltage transformers shall have the same requirements as outdoor with the exception of being dry-type and have an insulation temperature rise of 115 deg C. Additionally, interior transformers should be ventilated or totally enclosed, nonventilated, cast coil/encapsulated coil and have an insulation temperature rise rating of 185 deg C.

All 480V infrastructure shall be installed with respect to all AUS airport design standards, City of Austin Series 16000 Electrical Standards for Wiring, the City of Austin Building Criteria Manual Section 5 for Electrical and Section 7 for AE Green requirements, section of the AE Design Criteria Manual that govern 480V electrical infrastructure, and the NEC.

Communications

The Outside Plant communication connection to a site facility should be to the nearest existing AUS IT manhole that provides sufficient capacity. Physically diverse pathway should be used to route fiber and copper back to AUS IT core network switches and IT head end equipment. The following guidelines should be followed:

- A minimum of (4) 4-in ducts should be installed from the existing pathway to the new facility’s entrance facility
- Cut trenches uniformly and slope uniformly (4-in per 100 feet) away from building entrance; restore surface of areas disturbed by excavation and establish original grades
- Separate the OSP ducts by minimum of 3-in from exterior wall and minimum of 2-in between ducts; Provide separators a minimum of every 5-ft and secure separators to earth and ducts
- The OSP duct conduits shall be encased in concrete with minimum of 3-in concrete over ducts; provide a minimum of 30-in from top of duct to finished grade; bury warning tape 12-in above concrete over centerline with additional tape every 12-in off centerline as required
- Each duct conduit shall be populated with 3-cell Maxcell inner duct
- Maintenance holes (handholes and manholes) shall be installed at distance no greater than 500’ apart, with not more than 90-degrees of total bend between; all intersections of ducts and 90-degree bends shall include a maintenance hole
- Building entrance maintenance holes shall be provided within 30’ of buildings with a minimum size of 12’x10’x8’
- Handholes shall be a minimum of 40”x60”x30”
- Provide maintenance hole ancillary elements (e.g., grounding, ladders)
- Develop maintenance hole design based on load ratings / traffic ratings
- Label maintenance holes as “Communications”
- OSP backbone fiber optic cabling shall be armored indoor/outdoor single mode
- OSP backbone fiber optic cabling shall have a minimum 20-foot service loop at both ends of each cable; a 20-foot service loop at each maintenance hole
- Terminations shall be fusion spliced to factory provided “pig-tail” LC terminated cables
- OSP backbone copper cabling shall be Category 3 24 AWG flooded UTP (unshielded twisted pair)
- OSP backbone copper cabling shall have a 20-foot service loop at both ends of each cable; a 20-foot service loop in each maintenance hole; Terminate in entrance facility with lightning protection and then in rack mounted RJ-45 patch panel
- Provide telecommunications grounding and bonding

Gas

Will be developed in a future revision to this Design Standards Manual

Jet Fuel

Will be developed in a future revision to this Design Standards Manual

I. EXTERIOR IMPROVEMENTS (cont)

A. General Site Design Requirements (cont)

Stormwater Drainage and Water Quality

Background

The stormwater collection system on the airport encompasses a network of numerous channels, culverts, inlets, and detention, and water quality ponds facilities. The site drains to three watershed boundaries (Colorado River watershed, Carson Creek watershed, and the Onion Creek watershed).The vast majority of the airport site is within the Onion Creek watershed, with Onion Creek running along the eastern and southern boundaries of the site. The northwestern portion of the property drains into Carson Creek to the north/northwest. The northeastern portion of the property drains to the east and north to the Colorado River.

The City of Austin Watershed Protection Department shall be consulted from scoping through design development for all projects impacting drainage or water quality on AUS.

The stormwater and water quality infrastructure on AUS property is generally owned and maintained by AUS. This infrastructure is not required to be located within defined Utility Corridors, although it may be if crossing or running parallel to other utilities located in Utility Corridors.

Airport Development Ordinance

AUS has a specific “Ordinance for the Master Development Plan for Austin-Bergstrom International Airport” that guides development on the airport property that is approved by the City of Austin City Council. The most recent and approved version of this airport development ordinance supersedes portions of current City of Austin development ordinances and design standards, and should be followed as the primary guidance document for the design and construction of stormwater and water quality requirements for projects at AUS. It outlines certain criteria related to stormwater, detention, and water quality for construction at AUS. For elements not addressed by the airport development ordinance, the current City of Austin codes, ordinances, and design manuals shall be followed.

As modified by the airport development ordinance, the local City of Austin codes and standards that govern drainage and water quality design and construction include:

1. Current City of Austin Codes and Ordinances
   a. Land Development Code
2. Current City of Austin Technical Manuals
   a. Drainage Criteria Manual
   b. Environmental Criteria Manual
   c. Standard Specifications Manual
   d. Standards Manual
   e. Utilities Criteria Manual

Onion Creek RSMP

A key element of the existing stormwater system at AUS is its participation in the City of Austin’s Regional Stormwater Management Program (RSMP) for the Onion Creek watershed. AUS acquired 300 acres of net impervious cover detention capacity as part of the RSMP, meaning onsite detention for those 300 acres of future impervious cover is not required, although 2 year detention may be required to mitigate stream erosion potential. Based on participation in the RSMP, within the Onion Creek watershed, the airport is not required to provide 25 and 100-year detention for added impervious cover for those 300 acres. The airport maintains a spreadsheet tracking the constructed impervious cover within this watershed that counts against that allotment.

FAA Design Standards

For drainage improvements on the airfield, design and construction shall meet the minimum requirements of the FAA standards, primarily the most current version of Advisory Circular 150/5320-5D – Airport Drainage Design.

Stormwater Model

AUS has an existing SWMM model of the entire airport property that is generally updated with new projects. Any new developments should reference and utilize the SWMM model (or current stormwater model) for developing flows and sizing of infrastructure.

Airport Drainage Master Plan & Studies

For the design and construction of stormwater facilities at AUS, reference shall be made to the most recent Airport Drainage Master Plan, and subsequent studies that have been performed in the areas of a project. Coordination with AUS staff on obtaining the most recent models and studies is required.

Drainage Conveyance

The design of drainage conveyance infrastructure shall meet the requirements of the current airport development ordinance; and where not addressed by the airport development ordinance the current City of Austin codes, ordinances, design criteria manuals, standard specifications, and standard details, shall be met. In all cases for work on the airfield, design of drainage infrastructure shall meet the current FAA standards.

Stormwater Detention

As described above, stormwater detention in the Onion Creek watershed is addressed by the airport’s participation in the Onion Creek RSMP, including the evaluation of stream erosion potential. For areas outside the Onion Creek watershed, detention requirements are dictated by the Airport Master Development Ordinance and the City codes and ordinances. The design and locations of detention/retention ponds shall also take into account the recommendations and requirements of FAA Advisory Circular 150/5200-33C – Hazardous Wildlife Attractants on or Near Airports.

Stormwater Quality

Water quality design is primarily based on the City of Austin Environmental Criteria Manual for design and maintenance of water quality controls, with exceptions provided by the current Airport Master Development Ordinance. Special conditions that may be included in the Airport Master Development Ordinance include the exemption of taxiways and runways from conventional structural water quality treatment. Taxiways and runways are treated with vegetative buffer strips which are designed using criteria specific to the airport.

For areas requiring conventional structural water quality treatment, the design and locations of ponds shall also take into account the recommendations and requirements of FAA Advisory Circular 150/5200-33C – Hazardous Wildlife Attractants on or Near Airports.

De-Icing Facilities

Pending completion.

Storm Water Pollution Prevention Plan

Follow the requirements of the most current AUS Stormwater Pollution Prevention Plan.

I. EXTERIOR IMPROVEMENTS (cont)

A. General Site Design Requirements (cont)

Grades, Lines, and Level

Grades, lines, and levels shall be in accordance with the current City of Austin Standard Specification 01050 – Grades Lines & Levels.

Safety and Security during Construction

Airport security requirements shall be in accordance with the current City of Austin Standard Specification 01555 – Airport Security Requirements.

I. EXTERIOR IMPROVEMENTS (cont)

C. Landside Civil

Landside civil elements shall follow the requirements set forth herein. Designs shall be in accordance with the most recent Texas Department of Transportation, City of Austin, FAA, and other applicable codes and design guidelines as directed.

I. EXTERIOR IMPROVEMENTS (cont)

C. Landside Civil (cont)

Primary Public Roadways

This section relates to all non-airfield projects. Roadways on airport property are owned and maintained by AUS (unless specifically defined otherwise). Right-of-way or easements are not required for airport owned roads.

Design Criteria

The latest edition of the Texas Department of Transportation (TxDOT) Highway Design Section Operations and Procedures Manual shall be used for basic design criteria and geometry for roadways. Any deviation must be approved by the Department of Aviation. Where conditions require features that are not covered by this standard, the design shall be based on the use of good engineering practice utilizing similar designs to other City of Austin installations.

Design Speed

The proposed design speeds for a roadway shall be based on the safe speed that can be maintained over a section of roadway based on terrain, site distance, geometry, etc. Selected design speeds will be presented to AUS for review and approval prior to final design. Design criteria shall be based on the approved design speeds.

Design Vehicles

The physical and operating characteristics of the proposed design vehicles shall establish roadway design controls to accommodate the vehicle of that type. New projects shall be designed to meet the minimum requirements set forth for WB-50 design vehicles, unless otherwise approved by AUS. Fire fighting and emergency vehicles shall be accounted for in the design.

Lane Width

The minimum standard lane width shall be 12 feet unless approved otherwise by AUS.

Materials & Construction Specifications

Construction specifications for roadways shall be taken from the City of Austin's current standard specifications. Based on the specific needs of the project, the Engineer may amend the standard specifications or use of TxDOT standard specifications with approval of AUS.

Roadway Signs and Markings

The design of signage and markings for roadways shall be in accordance with the latest version of the Texas Manual for Uniform Traffic Control Devices. The signage details and requirements will conform to TxDOT standards. Wayfinding signage on the AUS campus shall conform to current standards and guidance provided by AUS.

Pavement Section

The design of roadway pavement sections outside of the airfield shall be based on the latest edition of TxDOT standards. Geotechnical investigations are required for the specific roadway location to determine the proposed pavement section. The Engineer shall submit the planned geotechnical boring locations/spacing for a project to AUS for approval prior to commencing the investigation.

Non-Revenue Parking Lots

All design work shall be done in accordance with accepted professional practices and in compliance with applicable codes, standards, and regulations.

Design Criteria

For parking areas at non-revenue generating parking lots (at support buildings, etc.) to be used by airport employees and non-traveling public, the parking requirements, including electric vehicle charging requirements, shall meet the current requirements of the City of Austin codes and ordinances. The overall number of spaces, the required number of Americans with Disabilities Act accessible parking spaces, and the geometry/layout of the parking area shall meet the current City of Austin codes, ordinances, and standard details. Pedestrian traffic flow shall be considered to provide access to buildings, avoid conflicts with traffic, and other hazardous conditions.

Materials & Construction Specifications

Construction specifications for parking lots shall be taken from the City of Austin's current standard specifications. Based on the specific needs of the project, the Engineer may amend the standard specifications or use of TxDOT standard specifications with approval of AUS.

Signs and Markings

The design of signage and markings for parking lots shall be in accordance with the latest version of the Texas Manual for Uniform Traffic Control Devices. The signage details and requirements will conform to TxDOT standards. Wayfinding signage on the AUS campus shall conform to current standards and guidance provided by AUS.

Pavement Section

The design of parking lot pavement sections outside of the airfield shall be based on the latest edition of TxDOT standards. Geotechnical investigations are required for the specific location to determine the proposed pavement section. The Engineer shall submit the planned geotechnical boring locations/spacing for a project to AUS for approval prior to commencing the investigation.

Security

If access to a parking lot is to be controlled, the current AUS standards for fencing, access terminals, gate arms, etc. shall be used. If required by AUS, CCTV security cameras may be required.

Revenue Generating Parking Lots

Will Be Developed in a Future revision to this Design Standards Manual

C. Landside Civil (cont)

Sidewalks and Trails

Sidewalks

Pedestrian concrete walks shall be constructed between buildings and other essential locations, and in locations directed by AUS for pedestrian connectivity on the campus. The minimum standard width for sidewalk pavement shall be 4 feet. Standard details and specifications shall be per current City of Austin standards. Sidewalks, curb cuts, and pedestrian ramps shall meet the accessibility requirements of the Americans with Disabilities Act.

Trails

Existing paved or unpaved trails at AUS should be protected or replaced/rerouted in-kind to accommodate proposed improvements with AUS approval. All landside projects should seek input from AUS regarding inclusion of trails within the proposed improvement site.

Irrigation and Landscaping

Careful consideration should be given to provide aesthetically pleasing landscaping while keeping aviation safety in mind. The primary goal of airport landscape management should be to reduce attracting wildlife species that interfere with safe aviation activities and eliminate the vertical intrusion of vegetation into aircraft operating airspace. To reduce potential wildlife issues with safe aircraft operations, the FAA has issued several Advisory Circulars. All FAA Part 139 certificated airports or airports that receive federal funding must adhere to these Advisory Circulars.

FAA AC 150/5200-33 provides guidance on certain land uses that have the potential to attract hazardous wildlife on or near public-use airports. Section 2-8 of this AC states: “There may be circumstances where two (or more) different land uses that would not, by themselves, be considered hazardous wildlife attractants…are in such an alignment with the airport as to create a wildlife corridor directly through the airport and/or surrounding airspace…therefore, airport operators and the wildlife damage management biologist must consider the entire surrounding landscape and community.”

Additionally, the 2005 Wildlife Hazard Management at Airports Manual, written jointly by the FAA and USDA states: “Do not use trees and other landscaping plants for the street side of airports that produce fruits or seeds attractive to birds. Avoid plants that produce fruits and seeds desired by birds. Also avoid the creation of areas of dense cover for roosting, especially by European starlings and blackbirds. Thinning the canopy of trees, or selectively removing trees to increase their spacing, can help eliminate bird roosts that form in trees on airports.”

Vegetation should be utilized for both aesthetics while also creating thermally controlled areas for passengers in waiting areas and circulation areas.

Landscaping should be incorporated into any design adjacent to Presidential Boulevard or any other public area or road, and a landscape study will be required. Landscaping and trees shall be incorporated within any workspace whenever conditions permit so. Shrubs may be planted adjacent to each other in groups of up to five. If there is more than one group of shrubs, there must be at least 10 feet between each group. If shrubs are not planted in groups, there must be at least 10 feet between each shrub. However, to address security concerns as well as vertical structure and wildlife hazards, no shrubs will be allowed within ten (10) feet from any airfield perimeter fence. Each design must provide an approved list of trees, shrubs, and ground cover for vegetation.

Trees can also be used in conjunction with canopies at open parking areas to provide additional shaded areas.

I. EXTERIOR IMPROVEMENTS (cont)

C. Landslide Civil (cont)

Revegetation

Will be developed in a future revision to this Design Standards Manual

I. EXTERIOR IMPROVEMENTS (cont)

Building imporovments and new construction designs should consider the following criteria. Passenger and guest comfort and safety should be prioritized throughout the design of all projects at AUS. Additionally, the AUS vision and mission should be emphasized in all buildings on the AUS campus.

D. Building Improvements

General Campus level Consideration

The AUS experience begins long before arriving to the BJT terminal: It begins at Presidential Boulevard upon exiting Bastrop Highway. Therefore, it is important to provide a holistic approach to the AUS experience and user perception by studying the impact and carefully planning of the location of any building or construction.

To achieve this, several landscaping and airport approach principles connect with Austin's traditional approach to lifestyle (nature and sport) should be studied. This is not intended to be an exhaustive list of principles and may not apply to all projects:

- Renovate and improve existing pathways along the campus, such as the central walk.
- Plan new pathways creating a functional network that connects the Airport Terminal with parking garages, hotels, and other campus facilities.
- Art in Public Places (AIPP) should be considered in this holistic design by improving the integration of the existing art program and proposing new programs that will contribute to the whole AUS passenger experience.
- Lighting along Presidential Boulevard should create a holistic, on campus feature.
- Create a welcoming feature along Presidential.

Noise Intrusion

Exterior Envelope

The exterior envelope of all buildings at AUS should be designed to provide occupant comfort and safety. The building envelop should serve to reduce harsh airport noises, particularly from aircraft.

Aircraft and Vehicular Traffic Noise Ingress

Will be developed in a future revision to this Design Standards Manual

Curbside

Will be developed in a future revision to this Design Standards Manual

Building Envelope

Passenger Facing Buildings

Will be developed in a future revision to this Design Standards Manual

Non-Passenger Facing Buildings

All non-passenger facing buildings should function well and, above all, should serve employees needs and safety and provide a pleasant work environment. To achieve this goal, the building envelope should:

- Provide shaded spaces inside and outside for comfort and climate control.
- Provide a façade that reduces glare for airfield operation.
- Provide a durable and easy to maintain façade.
- Provide a façade that inspires quality and beauty upon passengers and airport users.
- Provide sustainable envelope solutions such as solar panels and rainwater collection.

Building Envelope Composition

Transparent Portions-Curtain Walls

Transparent walls should be as clear as possible and should avoid heavily tinted or mirrored glass panels. Curtain wall mullions should be neutral colored anodized aluminum. Translucent panel glass (Low-iron channel glass) is also permitted.

Shading Devices

Solar protective devices may be mounted on the exterior of transparent walls to provide the most effective reduction of energy input through translucent layers. Aluminum louvers oriented in accordance with the façade orientation (Horizontal to the south, vertical on east and west) are preferred.

Opaque Portions

The following aspects should be considered for opaque portions of the building envelop. This list is not in an order of importance:

- Variety of design
- Insulation
- Easy replacement and maintenance of elements
- Light and color fast
- Graffiti resistance
- Sun and visual protection required.
- Reduce package waste during construction.
- Easily recyclable materials
- Self-cleaning treatments
- Air purifying material treatments
- Long life span material
- Fire safety
- Lightning protection
- Noise control

The building envelope should consist of one or more of the following preferred materials:

- Rear-ventilated ceramic façade solutions for thermal optimization and for better maintenance. (Structural separation of the functions of heat insulation and weather protection).
- Rear-ventilated stone façade solutions.
- Rear-ventilated aluminum panels in natural finish.
- Engineered stone.
- Opaque glass panel solutions.
- Natural or colored, glass fiber reinforced concrete panels.
- Standard Precast concrete panels.

These materials are also acceptable while less preferred:

- Metal panel solutions
- Composite metal panel systems.

I. EXTERIOR IMPROVEMENTS (cont)

D. Building Improvements (cont)

Building Envelope Composition (cont)

Opaque Portions(cont)

These materials should not be used as part of the visible building envelope:

- Load-Bearing Concrete Walls.
- CMU Walls
- Ventilated Or Semi Opaque Wall Materials

Preferred Material

- Perforated Concrete Or Ceramic Blocks.

Combination and Proportions

Opaque portions of the façade should combine matte and earthy finishes with polished or glazed contrast colors. None of the finish parts should consist of less than 25% of the overall façade.

Matte Earthy Or Natural Finishes

- Stone
- Terracotta
- Solid Surfaces

Polished Or Glazed Finishes

- Ceramic
- Metal

Dimension

- Façade composition shall combine larger rectangular formats with smaller dimension elements. For instance, extra-large terracotta panels combined with colored glazed metal panels.

Restrictions

- Metal panels shall not reach the ground floor, and rather be combined with a baseboard of at least 2 feet high.

Exterior Lighting

Exterior lighting requirements for buildings at AUS are based on the following standards:

- City of Austin – Code of Ordinances: Title 25.2 – Zoning, Chapter E, Article 2, Section 2.5: Exterior Lighting
- The IES Lighting Handbook, 10th Edition
- IES RP-8 (Parking Lots Only)
- IES RP-37-22: Lighting Airport Outdoor Environments
- IES RP-43-22: Lighting Exterior Applications

Fully shielded or full cut-off luminaires are required for parking lots, yard lighting, building exterior lighting, and building façade lighting. LED luminaires shall be used. Lighting calculations on all exterior areas should be conducted using AGI32, the industry standard software for lighting system design.

Lighting levels, uniformity ratios, and veiling luminance levels must meet the recommendations provided in the IES Lighting Handbook, 10th Edition and IES RP-43-22. Reduction in light pollution, glare, and spillover must meet the practices described in IES RP-37-22. Luminaires must be oriented away from the taxiways wherever possible.

An in-depth analysis of the exterior area should be conducted as design progresses to determine the various exterior areas. Based on this analysis, the most applicable area classifications will be used to determine recommended light levels and uniformity. The light levels shown in Table 26.4 of the IES Lighting Handbook, 10th Edition can be used to determine the required lighting levels in and around each AUS building. For example, a building with the exterior classified as a LZ4 area will be lighted as shown in the following table.

Area Classifications	Pertinent Standard	Average Illuminance (fc)	Max/Min Ratio	Avg./ Min. Ratio
Building Entries (Canopied, Secured/ Normally Locked)	IES Lighting Handbook, 10th Edition, Section 26	2	4:1	2:1
Building Entries (Uncovered, Secured/ Normally Locked)	IES Lighting Handbook, 10th Edition, Section 26	1	4:1	2:1
Building Façade Lighting (Dark Walls)	IES Lighting Handbook, 10th Edition, Section 26	10	NA	NA
Building Façade Lighting (Light Walls)	IES Lighting Handbook, 10th Edition, Section 26	20	NA	NA
Exterior Lighting (Areas with Electrical Switching Equipment)	IES RP-37-20, Table A-1 for Outdoor Electrical	2	NA	4:1
Parking Lot Lighting (Parking Area & Drive Aisles)	RP-8-21, Table 17-2	0.2	0.2	NA
Parking Lot Lighting (Transition Areas)	RP-8-21, Table 17-2	1	1	NA

Airport Support and Ancillary Facilities

Will be developed in a future revision to this Design Standards Manual

III. INTERIOR IMPROVEMENTS - NON-PUBLIC

The following design requirements are intended to be a minimum standard related to interior, non-public spaces at AUS. Designers should strive to follow these minimum standards to provide interior spaces that provide safe, comfortable, and functional spaces for AUS employees, tenants, and other users working in any facility or building on the AUS campus.

A. Lobbies

Lobbies should welcome and direct tenants and visitors, control access, and provide exit ways from buildings or individual spaces within buildings. Lobbies should also provide inclusive accessibility and user comfort. The lobby space may or may not include elevator lobbies, however, they should be adjacent or connected physically or aesthetically. Lobbies serve as the “public face” of buildings and individual spaces and should be inviting while also providing security to the rest of the building or space.

Architectural

Flooring

- Terrazzo
- Polished Concrete
- Resilient Tile (LVT / LVP)
- Resinous Flooring
- Walk-Off mats
    - Inset Carpet Type
    - Recessed Aluminum Grille Type

Following materials are prohibited

- Sealed or Topically stained Concrete
- Vinyl Composite Tile (VCT)

Walls

- Gypsum Board, Painted, MPI Gloss Level 3
- Vinyl Wall Covering
- Flush Wood Paneling
- Cork Paneling

Column Treatment

- Gypsum Board, Painted, MPI Gloss Level 3
- Flush Wood Paneling
- Metal Column Covers

Wall Base

- Integral terraazzo or resinous wall base with aluminum cap, 6”
- Stainless Steel, #4 Finish, Straight, 6”

Corner Guards

- Full Wall Height
- Stainless Steel
- Clip-on Vinyl

Following materials are prohibited

- Clear Plastic
- Wood

Ceilings

- Gypsum Board, Painted, MPI Gloss Level 1
- Acoustic Ceiling Panel, Standard Grid Size, 2x2 or 2x4 Panels
- Acoustic Metal Ceiling Panels
- Access Panels: Flush type with drywall bead; painted to match ceiling
- Textile Ceilings
- Linear metal ceilings
- Linear wooden ceilings
- Open to Structure (with the appropriate services coordination)

Technical

Mechanical

Air devices shall be located and directed to provide occupant comfort per latest version of ASHRAE 55 and shall be coordinated with architectural features and aesthetics.

Access panels for mechanical equipment above inaccessible ceilings shall be provided.

Ventilation shall be provided per minimum ventilation requirement according to the latest version of ASHRAE 62.1 and City of Austin (COA) Amendments.

Air distribution systems shall comply with acoustical requirements for this space.

Lobbies shall have their own independent temperature controls.

Plumbing

Fixtures

- Where electric water coolers are indicated, include vandal-resistant bubblers, filters, and bottle filling stations. Include a cane skirt for ADA/TAS compliance on bi-level coolers if not recessed in an alcove.
- Refer to the AUS Restroom Design Standards for additional information and requirements.

Piping and Accessories

- Provide access panels in non-accessible ceilings and walls for valve access, as applicable.

Electrical

Provide general purpose duplex receptacles throughout the lobby spaces. The upper outlet on each duplex should be controlled by the occupancy sensor serving the area.

Lighting

Lobbies are considered a transition space where generally people are waiting for short periods of time or passing through, and may or may not have a reception desk. In the waiting area of the lobby, a light level of 10fc should be measured at the floor and if a reception desk is in the space, then the lighting level at the desk should accommodate productivity levels with a target illuminance value of 30fc measured on the desktop. Lobbies should have emergency lighting and exit marking when in the path of egress.

Life Safety

Life safety systems within lobbies shall be provided and shall comply with the applicable requirements of the International Building Code (IBC) and International Fire Code (IBC), with City of Austin amendments, and all referenced codes and standards. Life safety systems are expected to include, but are not limited to, means of egress systems (i.e., quantity and capacity of exits), passive fire protection (i.e., fire barriers and opening protection), fire protection systems (i.e., automatic sprinkler, standpipe, and fire pump), fire alarm systems, and portable fire extinguishers. Each life safety system shall comply with the requirements of the applicable code or standard.

III. INTERIOR IMPROVEMENTS (cont)

A. Lobbies (cont)

IT and Security

- Access Control and Video Management Systems entering overall lobby area; individual lobbies will be addressed on a case-by-case basis
- Minimum (1) Work Area Outlets (WAO) for each workstation or reception desk, if provided, mounted 18-in above finished floor (AFF) or within furniture. The WAO shall have (2) data and (1) VoIP outlets, all using CAT 6A
- As required, (2) CAT 6A data outlet mounted 6-ft AFF (or via ceiling mount) and (1) Internet Protocol Television (IPTV) interface and minimum 55-in TV mounted on wall or ceiling mount
- Cellular Distribution Antenna System (C-DAS), as coverage levels dictate
- Emergency Responder Radio Communications Systems (ERRCS), as coverage levels dictate

B. Offices

The goal of office space is to provide the occupant with a space where productivity can be maximized. Offices shall be sufficiently sized to allow inclusive accessibility and comfort. While designing office space, architectural finishes, acoustic qualities, light levels, and thermal comfort must be carefully considered to achieve these goals.

Architectural

Flooring

- Carpet Tile (avoid in circulation areas)
- Resilient Tile (LVT / LVP)
- Continuous Linoleum
- Cork

Following materials are prohibited:

- Sealed or topically stained Concrete
- Vinyl Composite Tile (VCT)

Walls

- Gypsum Board, Painted, MPI Gloss Level 3
- CMU, Painted, MPI Gloss Level 3
- Aluminum framed interior storefront system
- All-glass interior storefront system
- Wood paneling
- Cork

Following materials are prohibited:

- Vinyl Wall Covering

Column Treatment

- Gypsum Board, Painted, MPI Gloss Level 3

Following materials are prohibited:

- Wood

Wall Base

- Thermoplastic-Rubber Base, Straight, 4” (carpet flooring)
- Thermoplastic-Rubber Base, Cove, 4” (resilient flooring

Corner Guards

Full Wall Height

- Stainless Steel
- Clip-on Vinyl

Following materials are prohibited:

- Clear Plastic
- Wood

Ceilings

- Gypsum Board, Painted, MPI Gloss Level 1
- Acoustic Ceiling Panel, Standard Grid Size, 2x2 or 2x4 Panels
- Textile Ceilings
- Linear metal ceilings
- Linear wooden ceilings
- Open Ceilings (with appropriate services coordination)

Technical

Mechanical

Air devices shall be located and directed to provide occupant comfort per latest version of ASHRAE 55 and shall be coordinated with architectural features and aesthetics.

Access panels for mechanical equipment above inaccessible ceilings shall be provided.

Ventilation shall be provided per minimum ventilation requirement according to the latest version of ASHRAE 62.1 and City of Austin (COA) Amendments.

Air distribution systems shall comply with acoustical requirements for this space.

Plumbing

Piping and Accessories

Provide access panels in non-accessible ceilings for valve access, as applicable.

Electrical

Provide a duplex outlet on each wall spaced not more than 12’ apart. The upper outlet on each duplex should be controlled by the occupancy sensor serving the area.

Lighting

Lighting systems in offices shall provide efficient, uniform, comfortable ambient and productive task lighting levels for the occupants. If daylighting is available, it shall be considered as a lighting contribution to the space and controlled in accordance with IECC requirements. In general, the lighting fixtures, layout, and controls should be designed with multiple illuminance levels so that the occupants have the ability to adjust the lighting level accordingly to meet their needs. For example, a localized task might require brighter illumination, or in contrast, a low illumination level may be desired for user comfort at the end of the day. Illumination targets shall be designed to the latest IESNA recommendations for offices; 30fc measured at the work plane or desk.

- Luminaires shall be LED with 0-10V dimming drivers. Indirect lighting is preferred for glare control.
- Stand-alone room controls with dual-technology vacancy sensors, dimming capability, and daylighting responsive.

Life Safety

Life safety systems within offices shall be provided and shall comply with the applicable requirements of the International Building Code (IBC) and International Fire Code (IBC), with City of Austin amendments, and all referenced codes and standards. Life safety systems are expected to include, but are not limited to, means of egress systems i.e., quantity and capacity of exits), passive fire protection (i.e., fire barriers and opening protection), fire protection systems i.e., automatic sprinkler, standpipe, and fire pump), fire alarm systems, and portable fire extinguishers. Each life safety system shall comply with the requirements of the applicable code or standard.

III. INTERIOR IMPROVEMENTS (cont)

B. Offices (cont)

IT and Security

The offices used by the airport and staff shall have following infrastructure to support various systems:

General Offices (one or two staff):

- Access Control and Video Management Systems entering overall office area; individual offices will be addressed on a case-by-case basis
- Minimum (1) Work Area Outlets (WAO) for each workstation or desk mounted 18-in above finished floor (AFF) or within furniture. The WAO shall have (2) data and (1) VoIP outlets, all using CAT 6A
- (1) WAO with (2) data for Printer/Fax outlets, all using CAT 6A

General Offices (shared by more than five staffs):

- Minimum (1) WAO for each workstation or desk mounted 18-in AFF or within furniture. The WAO shall have (2) data and (1) VoIP outlets, all using CAT 6A
- (1) WAO with (2) data for Printer/Fax outlets, all using CAT 6A
- (2) CAT 6A ceiling mount data outlet for Wi-Fi
- Cellular Distribution Antenna System (C-DAS), as coverage levels dictate
- Emergency Responder Radio Communications Systems (ERRCS), as coverage levels dictate

C. Break Rooms

Break rooms should provide employees with a comfortable, functional, and practical space to take required breaks from daily duties and should be sized to allow inclusive accessibility and comfort. Finishes, materials, and layout must allow for durability and easy cleaning. While designing break rooms, architectural finishes, acoustic qualities, light levels, and thermal comfort must be carefully considered to achieve these goals. At a minimum, the following equipment should be included in the break room: Dishwasher, Coffee Maker, Full-Height Refrigerator, Stand Alone Ice Maker, In-Sink Garbage Disposer, Range, Microwave (may be range hood type).

Architectural

Flooring

- Resilient Tile (LVT / LVP)
- Resinous Flooring
- Continuous Linoleum

Following materials are prohibited:

- Sealed or topically stained Concrete
- Vinyl Composite Tile (VCT)

Walls

- Gypsum Board, High-Build Epoxy Coating, MPI Gloss Level 5
- CMU, High-Build Epoxy Coating, MPI Gloss Level 5

Column Treatment

- Gypsum Board, High-Build Epoxy Coating, MPI Gloss Level 5

Following materials are prohibited:

- Wood

Wall Base

- Integral wall base with aluminum cap, 6” (resinous flooring)
- Thermoplastic-Rubber Base, Cove, 4” (resilient flooring)

Corner Guards

- Full Wall Heigh
- Stainless Steel
- Clip-on Vinyl

Following materials are prohibited:

- Clear Plastic
- Wood

Ceilings

- Gypsum Board, Painted, MPI Gloss Level 1
- Acoustic Ceiling Panel, Standard Grid Size, 2x2 or 2x4 Panels
- Textile Ceilings
- Linear Metal Ceilings
- Linear Wooden Ceilings
- Open To Structure (with appropriate services coordination)

Casework

- Plastic-Laminate-Faced Architectural Cabinets
- Phenolic Panel

Countertops

- Solid Surface Material
- Quartz
- Granite

Following materials are prohibited

C. Break Rooms (cont)

- Plastic Laminate

Technical

Mechanical

Air devices shall be located and directed to provide occupant comfort per latest version of ASHRAE 55 and shall be coordinated with architectural features and aesthetics.

Access panels for mechanical equipment above inaccessible ceilings shall be provided.

Ventilation shall be provided per minimum ventilation requirement according to the latest version of ASHRAE 62.1 and City of Austin (COA) Amendments.

Where included, range hoods shall be ducted to the exterior of the building.

Break Rooms shall have their own independent temperature controls.

Air distribution systems shall comply with acoustical requirements for this space.

Plumbing

Fixtures

- Provide sinks as indicated.
- Provide ice-maker wall-boxes with shock arrestors behind refrigerators.
- Where stand-alone ice-makers are indicated, provide a dedicated Reduced-Pressure-Zone (RPZ) type backflow preventer in the water supply. Include a floor sink beneath the ice maker or sink and route the ice maker drain and RPZ relief-port drain to the floor sink.
- Where plumbed coffee, espresso, or tea makers are indicated, provide a Double Check Valve Assembly (DCVA) in the water supply. A single DCVA may serve multiple coffee, espresso, or tea makers.

Piping and Accessories

- Provide access panels in non-accessible ceilings for valve access, as applicable.

Electrical

Provide dedicated duplex outlets for appliances, i.e., microwave,coffee maker, refrigerator, dishwasher, vending, etc. Provide quadplex outlets 6” above counter space not more than 36” apart for general use. Provide duplex outlets on each wall spaced not more than 12’ apart for general use. General use outlets should have the upper outlet on each duplex controlled by the occupancy sensor serving the area. Outlets that are within 6’ of a water source should be GFCI protected.

Lighting

Break rooms are considered a common application space type according to the IESNA with a target illumination of 10fc measured on the floor. Task lighting at the counter area is recommended where handwashing, dishwashin and food preparation occurs. This can be easily accommodated with the installation of low-profile undercabinet LED lighting with local control. If the programming does not allow for undercabinet task lighting, then the minimum illumination level of the break room should be increased to 30fc measured on the counter.

- Luminaires shall be LED with 0-10V dimming drivers.
- Dual-Technology Vacancy controls.
- In spaces where daylight is available, the control device shall be both vacancy and daylighting responsive.

IT and Security

- (1) CAT 6A wall mounted VoIP outlet mounted 42-in AFF
- (2) CAT 6A data outlet mounted 6-ft AFF (or via ceiling mount) and (1) Internet Protocol Television (IPTV) interface and minimum 55-in TV mounted on wall or ceiling mount
- (1) CAT 6A data outlet for Time Clock attendance recording system mounted 42-in AFF
- Cellular Distribution Antenna System (C-DAS), as coverage levels dictate
- Emergency Responder Radio Communications Systems (ERRCS),
as coverage levels dictate

III. INTERIOR IMPROVEMENTS (cont)

D. Conference / Training Rooms

Conference and training rooms should provide occupants with productive space for meeting, training, and teleconferencing and shall be sufficiently sized to allow inclusive accessibility and comfort. While designing conference and training rooms, architectural finishes, acoustic qualities, light levels, and thermal comfort must be carefully considered to produce a productive space.

Architectural

Flooring

- Carpet Tile
- Sheet Carpet

Following materials are prohibited

- Sealed or topically stained Concrete

Walls

- Gypsum Board, Painted, MPI Gloss Level 3
- Vinyl Wall Covering
- Flush Wood Paneling

Column Treatment

- Gypsum Board, Painted, MPI Gloss Level 3
- Flush Wood Paneling

Wall Base

- Thermoplastic-Rubber Base, Straight, 4”

Corner Guards

- Stainless Steel
- Clip-on Vinyl

Following materials are prohibited

- Clear Plastic
- Wood

Ceilings

- Gypsum Board, Painted, MPI Gloss Level 1
- Acoustic Ceiling Panel, Standard Grid Size, 2x2 or 2x4 Panels
- Acoustic Metal Panels
- Wood Baffle Systems

Technical

Mechanical

Air devices shall be located and directed to provide occupant comfort per latest version of ASHRAE 55 and shall be coordinated with architectural features and aesthetics.

Access panels for mechanical equipment above inaccessible ceilings shall be provided.

Ventilation shall be provided per minimum ventilation requirement according to the latest version of ASHRAE 62.1 and City of Austin (COA) Amendments.

Air distribution systems shall comply with acoustical requirements for this space.

Conference and Training Rooms shall have their own independent temperature controls.

Plumbing

Fixtures

- Provide sinks if indicated.
- Where stand-alone ice-makers are indicated, provide a dedicated Reduced-Pressure-Zone (RPZ) type backflow preventer in the water supply. Include a floor sink beneath the ice maker or sink and route the ice maker drain and RPZ relief-port drain to the floor sink.
- Where plumbed coffee, espresso, or tea makers are indicated, provide a Double Check Valve Assembly (DCVA) in the water supply. A single DCVA may serve multiple coffee, espresso, or tea makers.

Piping and Accessories

- Provide access panels in non-accessible ceilings for valve access, as applicable.

Electrical

Provide duplex outlets on each wall spaced not more than 12’ apart for general use. General use outlets should have the upper outlet on each duplex controlled by the occupancy sensor serving the area. Provide floor box/or poke-thru under the conference room table with a quadplex outlet and 2 gang opening for AV/IT connectivity.

Lighting

Conference rooms and training rooms may accommodate many people and often use a flexible furniture arrangement. The lighting in the space shall accommodate different functions and offer flexibility and control to the occupants. For this purpose, the IESNA recommends target illuminance levels for an educational space with audio/visual at 50fc measured on the table. The layout of the fixtures should accommodate flexibility in the space and provide both uniform ambient levels and dimming capabilities. Multiple zones of lighting should be considered by the lighting professional to optimize the comfort of the occupants.

- Luminaires shall be LED with 0-10V dimming drivers.
- Controls with dual-technology vacancy sensors, dimming capability, and daylighting responsive.
- Multiple zones of lighting with dimming capabilities.
- Ability to interface with audio-visual systems.

Life Safety

Life safety systems within conference rooms and training rooms shall be provided and shall comply with the applicable requirements of the 2021 International Building Code (IBC) and 2021 International Fire Code (IBC), with City of Austin amendments, and all referenced codes and standards. Life safety systems are expected to include, but are not limited to, means of egress systems (i.e., quantity and capacity of exits), passive fire protection (i.e., fire barriers and opening protection), fire protection systems (i.e., automatic sprinkler, standpipe, and fire pump), fire alarm systems, and portable fire extinguishers. Each life safety system shall comply with the requirements of the applicable code or standard.

III. INTERIOR IMPROVEMENTS (cont)

D. Conference / Training Rooms (cont)

IT and Security

- As required, (1) CAT 6A wall mounted VoIP outlet mounted 42-in AFF
- Audio / Visual equipment to support space purpose such as projector, conference display, conference overhead speakers, conference microphone, conference phone, HDMI cabling and ethernet cabling from conference table to conference display or projector
- As required, training workstations, CAT 6A data outlets, and other low voltage elements to support required training purposes
- As required, (2) CAT 6A data outlet mounted 6-ft AFF (or via ceiling mount) and (1) Internet Protocol Television (IPTV) interface and minimum 55-in TV mounted on wall or ceiling mount
- Cellular Distribution Antenna System (C-DAS), as coverage levels dictate
- Emergency Responder Radio Communications Systems (ERRCS), as coverage levels dictate

III. INTERIOR IMPROVEMENTS (cont)

E. Service Corridors

Service corridors are high-traffic areas and are prone to daily wear and tear. Consideration shall be given to the anticipated primary and occasional usages of these spaces, particularly to the number of people travelling through at any given time. Finishes shall be robust, easily cleaned and easily maintained.

Architectural

Flooring

- Resilient Tile (LVT / LVP)
- Resinous Flooring
- Latex Water-Based Floor Enamel
- Sealed Concrete using Penetrating Water Repellent

Following materials are prohibited

- Topically stained Concrete

Walls

- Gypsum Board, High-Build Epoxy Coating, MPI Gloss Level 5
- CMU, High-Build Epoxy Coating, MPI Gloss Level

Column Treatment

- Gypsum Board, High-Build Epoxy Coating, MPI Gloss Level 5

Following materials are prohibited

- Wood

Corner Guards

- Stainless Steel
- Clip-on Vinyl

Following materials are prohibited

- Clear Plastic

Wall Base

- Stainless Steel, Flat, 8” (omit if using stainless steel wall protection)

Wall Protection

Wall protection should extend 48” AFF (min)

- Stainless Steel
- Rigid Vinyl
- FRP

Ceilings

- Gypsum Board, Painted, MPI Gloss Level 1
- Acoustic Ceiling Panel, Standard Grid Size, 2x2 or 2x4 Panels
- Open to Structure

Technical

Mechanical

Air devices shall be located and directed to provide occupant comfort per latest version of ASHRAE 55 and shall be coordinated with architectural features and aesthetics.

Access panels for mechanical equipment above inaccessible ceilings shall be provided.

Ventilation shall be provided per minimum ventilation requirement according to the latest version of ASHRAE 62.1 and City of Austin (COA) Amendments.

Air distribution systems shall comply with acoustical requirements for this space.

Plumbing

Piping and Accessories

- Provide access panels in non-accessible ceilings for valve access, as applicable.

Electrical

Provide duplex outlets at a maximum distance of 40’ apart. Alternate on opposite sides of the corridor.

Lighting

Lighting fixtures and controls in service corridors shall provide uniform lighting levels with a target illuminance level of 10-15fc measured at the floor.

Lighting in service corridors shall be connected and controlled to the BMS system. Emergency lighting and exit marking shall be provided to meet minimum code requirements.

Life Safety

Life safety systems within service corridors shall be provided and shall comply with the applicable requirements of the 2021 International Building Code (IBC) and 2021 International Fire Code (IBC), with City of Austin amendments, and all referenced codes and standards. Life safety systems are expected to include, but are not limited to, means of egress systems (i.e., quantity and capacity of exits), passive fire protection (i.e., fire barriers and opening protection), fire protection systems (i.e., automatic sprinkler, standpipe, and fire pump), fire alarm systems, and portable fire extinguishers. Each life safety system shall comply with the requirements of the applicable code or standard.

IT and Security

- Access Control and Video Management Systems (VMS) camera monitoring entering service corridors
- Wi-Fi Access Point; as coverage levels dictate
- Cellular Distribution Antenna System (C-DAS), as coverage levels dictate
- Emergency Responder Radio Communications Systems (ERRCS),
  as coverage levels dictate

III. INTERIOR IMPROVEMENTS (cont)

F. IT Support Spaces/Electrical Rooms

IT Support spaces house data processing systems including floor- and counter-mounted units. Because of the computer and electronic equipment housed in these spaces require regulated temperature and humidity, reliable power and HVAC is critical 24 hours per day.

Architectural

Flooring

- Static-Control Resilient Flooring
- Static Dissipative Concrete Sealer

Walls

- Gypsum Board, Painted, MPI Gloss Level 4
- CMU, Painted, MPI Gloss Level 4
- Fire Retardant Treated Plywood Panel, Painted, MPI Gloss Level 4

The following materials are prohibited

- Vinyl Wall Covering

Column Treatment

- Gypsum Board, Painted, MPI Gloss Level 3

The following materials are prohibited

- Wood

Wall Base

- Thermoplastic-Rubber Base, Cove, 4”

Corner Guards

- Stainless Steel
- Clip-on Vinyl

The following materials are prohibited.

- Clear Plastic
- Wood

Ceilings

- Acoustic Ceiling Panel, Standard Grid Size, 2x2 or 2x4 Panels
- Exposed to Structure

Technical

Mechanical

Primary equipment providing air conditioning for this space shall be located outside of the space.

Air devices shall not be installed directly over IT equipment and shall be located and directed to provide adequate ventilation of IT equipment.

Access panels for mechanical equipment above inaccessible ceilings shall be provided.

Ventilation shall be provided per minimum ventilation requirement according to the latest version of ASHRAE 62.1 and City of Austin (COA) Amendments.

Air distribution systems shall comply with acoustical requirements for this space.

A backup, non-ducted, split system on emergency power shall be provided and shall activate upon failure of the primary system.

IT Rooms shall have their own independent temperature controls.

Hydronic and condensate piping shall not run directly over IT equipment.

Electrical

Provide dedicated branch circuits to each IT rack. Provide duplex outlets on each wall for general purpose use. Provide dedicated duplex outlets for security devices.

Lighting

The same lighting found in equipment rooms, personnel office spaces, and storage closets can also be used in IT support spaces. The fixtures in equipment rooms shall consider the IT cable tray, bus duct, and/or IT hardware infrastructure. Horizontal illuminance and vertical illuminance levels should be considered. The IESNA recommends a horizontal illuminance of 50fc measured at 36” AFF and a vertical illuminance of 20 fc measured on the equipment racks in equipment rooms. The offices for personnel, storage closets for media, etc., should follow the recommendations for common space type applications with 30fc measured at the work plane for offices and 10fc measured at the floor for storage spaces. The main equipment rooms shall be provided with emergency lighting.

Life Safety

Life safety systems within IT support spaces shall be provided and shall comply with the applicable requirements of the 2021 International Building Code (IBC) and 2021 International Fire Code (IBC), with City of Austin amendments, and all referenced codes and standards. Life safety systems are expected to include, but are not limited to, means of egress systems (i.e., quantity and capacity of exits), passive fire protection (i.e., fire barriers and opening protection), fire protection systems (i.e., automatic sprinkler, standpipe, and fire pump), fire alarm systems, and portable fire extinguishers. Each life safety system shall comply with the requirements of the applicable code or standard.

IT and Security

Technology systems within IT support spaces must support the equipment and operational needs of the facility. These systems may include network infrastructure, wireless “Wi-Fi” network, cellular and radio distributed antenna systems, public address, digital displays, audio-video conferencing, video surveillance, electronic access control, and intercom.

III. INTERIOR IMPROVEMENTS (cont)

G. Shops / Utility Rooms / Mechanical Rooms

Shops and Utility Rooms are used for the assembly, disassembly, and repairing various types of materials and equipment. Shops and Utility Rooms must be designed to accommodate a structured working environment with a heavy reliance on machinery and technology. Well laid out circulation spaces are critical to the safety and well-being of building occupants and increased productivity. These spaces need to accommodate changes in workflow caused by new technology and new equipment.

Architectural

Flooring

- Latex Water-Based Floor Enamel
- Sealed Concrete using Penetrating Water Repellent

Following materials are prohibited

- Topically stained Concrete

Walls

- Gypsum Board, High-Build Epoxy Coating, MPI Gloss Level 5
- CMU, High-Build Epoxy Coating, MPI Gloss Level

Column Treatment

- Gypsum Board, High-Build Epoxy Coating, MPI Gloss Level 5

Corner Guards

- Stainless Steel

Wall Protection

Wall protection should extend 48” AFF (min)

- Stainless Steel

Wall Base

- Stainless Steel, Flat, 8” (omit if using stainless steel wall protection)

Ceilings

- Acoustic Ceiling Panel, Standard Grid Size, 2x2 or 2x4 Panels
- Exposed to Structure

Technical

Mechanical

Air devices shall be located and directed to provide occupant comfort per latest version of ASHRAE 55 and shall be coordinated with architectural features and aesthetics.

Access panels for mechanical equipment above inaccessible ceilings shall be provided.

Ventilation shall be provided per minimum ventilation requirement according to the latest version of ASHRAE 62.1 and City of Austin (COA) Amendments.

Air distribution systems shall comply with acoustical requirements for this space.

The Shops and Utility Rooms shall have their own independent temperature controls.

Plumbing

Fixtures

- Provide hose bibbs and floor drains where area washdown is required for cleaning or maintenance.
- Provide sinks with hot and cold water where indicated.
- Where miscellaneous equipment requires a domestic water supply, include backflow prevention device per City of Austin’s Backflow Prevention Hazard List, as applicable.

Piping and Accessories

- Where compressed air is required for tool or equipment operation, consider portable air compressors. If inadequate, provide a central compressed air system within the shop.

Electrical

Provide duplex outlets on each wall spaced not more than 12’ apart for general use. Provide dedicated duplex outlets/ service disconnect as required for specialty equipment. Provide GCFI outlets as required by the NEC.

Lighting

The lighting in shops or utility spaces should provide ambient lighting and additional task lighting for the functions of the space. Ambient lighting levels should target 20fc measured at the floor, and task illumination should be provided at workshop counters, or near powered machinery or equipment if applicable. Task illumination should be controlled locally, and ambient lighting shall be controlled by a dual-technology vacancy sensor.

Life Safety

Life safety systems within shops and utility rooms shall be provided and shall comply with the applicable requirements of the International Building Code (IBC) and International Fire Code (IBC), with City of Austin amendments, and all referenced codes and standards. Life safety systems are expected to include, but are not limited to, means of egress systems (i.e., quantity and capacity of exits), passive fire protection (i.e., fire barriers and opening protection), fire protection systems (i.e., automatic sprinkler, standpipe, and fire pump), fire alarm systems, and portable fire extinguishers. Each life safety system shall comply with the requirements of the applicable code or standard.

Low Voltage

Technology systems within shops and utility rooms must support the equipment and operational needs of the space. These systems may include network infrastructure, wireless “Wi-Fi” network, cellular and radio distributed antenna systems, public address, video surveillance, electronic access control, and intercom.

Equipment

Will be developed in a future revision to this Design Standards Manual

III. INTERIOR IMPROVEMENTS (cont)

H. Vertical Conveyance

Service Elevators

Providing the recommendation of the required capacity of the Elevator that is suitable for passenger and material transport. System will provide transportation for all equipment, materials, and passengers between all floors or levels in the area it is installed. Provide unit of suitable capacity based upon a ridership study of the areas being served, including any heavy weight equipment for installation. Elevators are to be provided with elevator machine rooms that will contain all machinery and controllers in a common locations. Service for the elevators should comply with all applicable codes and ordinances.

Service elevators should be located to conveniently serve all required floors including basements, interstitial spaces, and overhead mechanical spaces.

Service elevators should comply with all applicable codes and ordinances including, but not limited to, ASME, NFPA, IBC, ADAG, and Austin ordinances.

Elevator enclosures should be front entrance or front/rear entrance type and should include the following finishes and requirements.

Flooring

- Zinc coated steel diamond plate
- Rubber Floor

Walls

- Protective Padding (hooks)
- Zinc coated steel diamond plate

Ceilings

- Stainless Steel

Lighting

- LED Light Fixtures

Doors

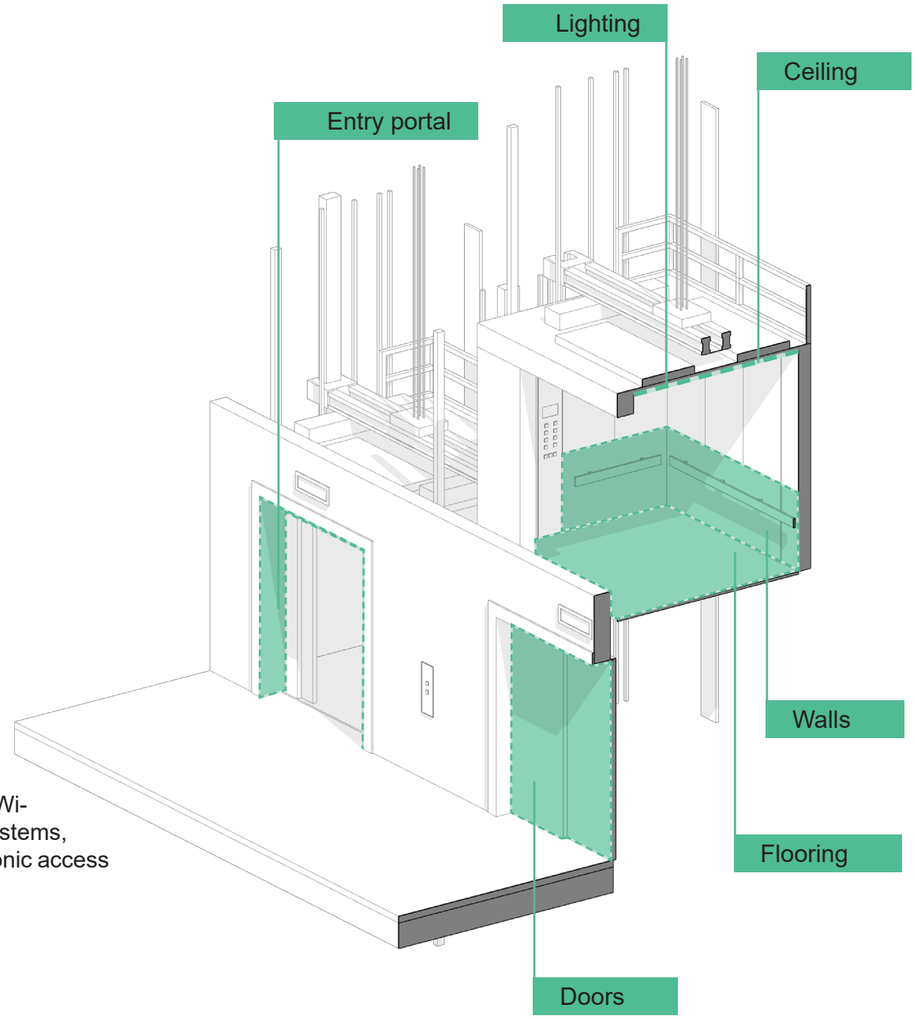
- Sliding Doors

Entry Portal

- Stainless Steel

Low Voltage

Technology systems within elevators must support the equipment and applicable requirements of the Current Accepted International Building Code (IBC). These systems may include network infrastructure, wireless “Wi-Fi” network, cellular and radio distributed antenna systems, public address, digital displays, video surveillance, electronic access control, and audio-video intercom.



II. INTERIOR IMPROVEMENTS (cont)

H. Vertical Conveyance (cont)

Non-Passenger Facing / Back-of-House Stairs

Careful consideration should be given to stair design to contribute to occupant safety in day-to-day use as well as emergency situations.

All stairs at AUS must be of permanently fixed construction and must meet all building code requirements, OSHA requirements and accessibility requirements. Stair widths must accommodate the required occupant load, but consideration should be given to providing additional width for ease of use and comfort. Materials should be considered in stairs to provide safe conveyance between floors.

Guard Rail / Handrail

- Stainless Steel
- Steel, Powder Coated
- Steel, High-Performance Coated

Tread / Riser

- Steel, High-Performance Coated Riser
- Sealed Concrete
- Resilient tread / nosing
- Metal Grating (Exterior/Utility Space Only)

Walls

- Gypsum Board, Painted, MPI Gloss Level 4
- CMU, Painted, MPI Gloss Level 4

Ceiling

- Open to Structure
- Acoustic Ceiling Panel, Standard Grid Size, 2x2 or 2x4 Panels

Lighting

Lighting in stairways should be designed to keep pedestrians safe and to provide guidance in emergencies. The horizontal illuminance targets for the floor or steps should be achieved to meet the requirements for wayfinding and emergency signage. The mounting locations for fixtures and signage should be carefully coordinated with the architectural interior team regarding mounting surfaces and heights. The IESNA recommendations for horizontal illuminance at the floor level in a typical stair is 5fc in a high activity stair 10fc, and in a live surveillance stair area 10fc. Considering the surveillance recommendation and future technology requirements, lighting in AUS stairs should be 10fc for the high activity and live surveillance categories.

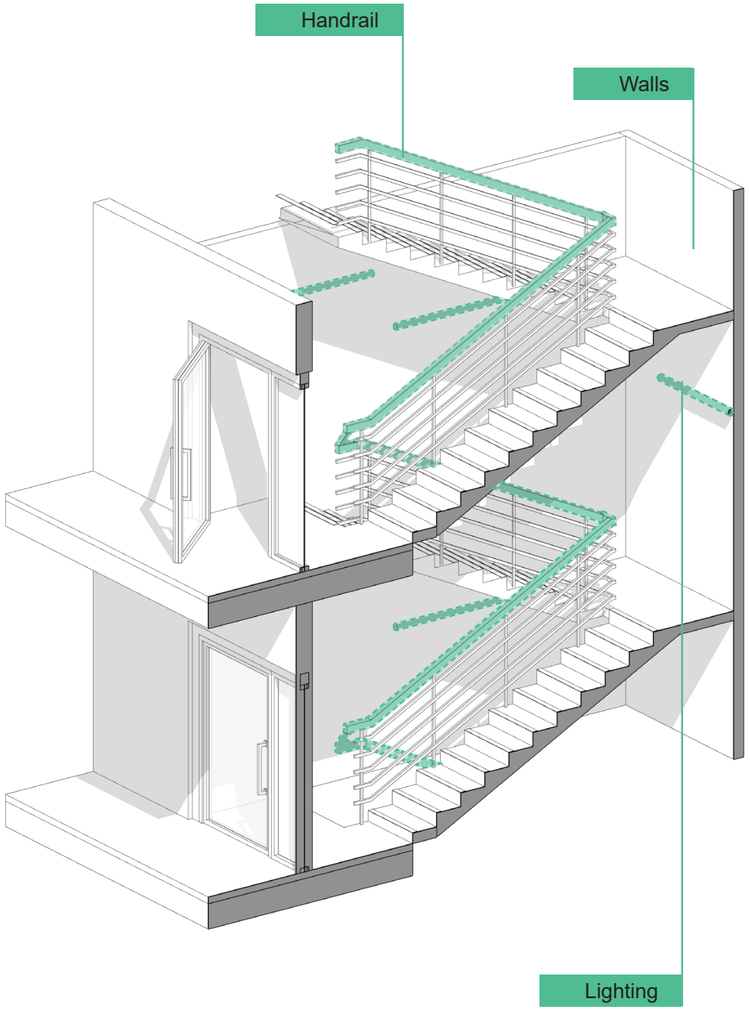
In addition to general purpose fixtures used at stair locations, additional lighting fixtures may be used where localized lighting may be needed for safety, such as at a transition in floor level other than the expected stair riser, or at a ramp. The power for the lighting fixtures, the emergency exit signage, and AUS wayfinding signage should be coordinated with the electrical engineer to be energized by the appropriate branch of the electrical system per NFPA 110, Standard for Emergency and Standby Power Systems and National Electric Code, Article 700, Emergency Systems.

Low Voltage

Technology systems within stairwells must support the equipment and applicable requirements of the 2021 International Building Code (IBC). These systems may include network infrastructure, wireless “Wi-Fi” network, cellular and radio distributed antenna systems, public address, video surveillance, electronic access control, and audio-video intercom.

IT/Communication

Technology systems within stairwells must support the equipment and applicable requirements of the 2021 International Building Code (IBC). These systems may include network infrastructure, wireless “Wi-Fi” network, cellular and radio distributed antenna systems, public address, video surveillance, electronic access control, and audio-video intercom.



II. INTERIOR IMPROVEMENTS (cont)

K. Restrooms

Non-public or "back-of-house" restrooms should provide privacy, comfort, and functionality for all AUS staff, tenants, and visitors. As a first priority, non-public restrooms should be functional, inclusively accessible, durable, clean, and bright.The inclusive design approach includes improved usability characteristics to ensure they are usable to the greatest extent possible by people of all ages, genders and abilities.

Architectural

Flooring & Walls

- Large Format Porcelain Tile
- Terrazzo

Millwork

- Stainless Steel
- Plastic Laminate
- Phenolic

Contertops

- Quartz
- Solid Surface

Ceiling

- Acoustic Ceiling Tiles
- Gypsum Board

Toilet Partitions

- When feasible, stall partitions should be ceiling hung
- Stalls should be detailed to prevent any gaps allowing sight lines into the stall
- Materials
  - Phenolic
  - Stainless Steel
- Stainless Steel Hardware

Toilet Accessories - Stainless Steel

- Grab Bar
- Toilet Tissue Dispenser
- Sanitary Napkin Disposal
- Toilet Seat Cover Dispenser
- Soap Dispenser
- Mirror
- Paper Towel Dispenser / Receptacle

Technical

Mechanical

Air devices shall be located and directed to provide occupant comfort per latest version of ASHRAE 55 and AUS Restroom Design Standards and shall be coordinated with architectural features and aesthetics.

Access panels for mechanical equipment above inaccessible ceilings shall be provided.

Exhaust and ventilation shall be provided per AUS Restroom Design Standards.

Air distribution systems shall comply with acoustical requirements for this space.

Plumbing

Fixtures

- Provide plumbing fixtures per the AUS Restroom Design Standards and architectural drawings.
- Where electric water coolers are indicated, include vandal-resistant bubblers, filters, and bottle filling stations. Include a cane skirt for ADA/TAS compliance on bi-level coolers if not recessed in an alcove.
- For water closet and urinal flush valves, include a true mechanical override on the user side, as well as an electronic push-button actuator with the button located in the chase behind the fixture for maintenance.

- Where mop sinks include a chemical mixing unit, include a faucet bleeder t-device for backflow prevention between the hard-connected hose and the mop sink faucet.
- Refer to the AUS Restroom Design Standards for additional information and requirements.

II. INTERIOR IMPROVEMENTS (cont)

K. Restrooms (cont)

Piping and Accessories

- Provide cleanouts in the vertical vent takeoffs of all water closets and urinals. The cleanouts shall face the accessible plumbing chase located behind the fixtures.
- Provide cleanouts at the upstream end of all horizontal sanitary waste piping serving multiple fixtures, with the cleanout located above the flood-level rim of the fixtures served.
- Include shock arrestors in water lines connected to fixtures or equipment with quick-closing valves. Size and installation of shock arrestors shall be per PDI-WH201.
- Provide isolation and balancing valves within the accessible chase spaces, wherever they are provided. Where chase spaces are not provided, provide access panels in non-accessible ceilings and walls for valve access, as applicable.

Electrical

Provide duplex GFCI protected outlet 6” above the counter at each end of the sink area. Provide dedicated branch circuit to each hand dryer. Provide GFCI outlets as required for automatic sensor for lavatories and sinks.

Lighting

Restrooms for employees should have lighting controlled automatically via dual technology occupancy sensors or controlled by the BAS Schedule. Restrooms shall be adequately lit to provide a sense of cleanliness and safety. Multiple lighting levels shall be considered at different zones of a restroom. In multiple stall restrooms, multiple lighting sources may be utilized to achieve lighting levels at appropriate zones. In restrooms with showers, an independent lighting source should be provided in the shower. At the handwashing station, illumination should be provided to achieve a higher level of 15-20fc measured at the lavatory. In locker room areas, it is recommended that illumination levels target of 5-10fc measured at the floor and 20fc measured at the lavatory or countertop.

Life Safety

Life safety systems within restrooms shall be provided and shall comply with the applicable requirements of the 2021 International Building Code (IBC) and 2021 International Fire Code (IBC), with City of Austin amendments, and all referenced codes and standards. Life safety systems are expected to include, but are not limited to, means of egress systems (I.e., quantity and capacity of exits), passive fire protection (I.e., fire barriers and opening protection), fire protection systems (I.e., automatic sprinkler, standpipe, and fire pump), fire alarm systems, and portable fire extinguishers. Each life safety system shall comply with the requirements of the applicable code or standard.

Low Voltage

Technology systems within restrooms must support the smart restroom equipment and applicable requirements of the International Building Code (IBC). These systems may include network infrastructure, wireless “Wi-Fi” network, cellular and radio distributed antenna systems, public address, and digital displays.

Equipment

Toilets

- Must Contain A Watersense Label
- Wall-Mounted
- Flush/Leak Detectors
- Siphon Jet
- Recessed Flush-Ometer With Sensor.
- Touch-Free Activation With Manual Override Option

Urinals

- In order to prevent splashing at urinal, provide a splash guard placed at the basin of the urinal and an AUS approved “bullseye” emblem etched at the anti-backsplash wall of the urinal.
- Must contain a Water Sense Label

Lavatory

- Faucet must contain a WaterSense Label
- Touch-free activation at soap and water

Drinking Fountain

- Code approved drinking fountain with bottle filler (placed at ADA height)
- Water fountains should be recessed off the main circulation space

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TECHNICAL DESIGN STANDARDS

WILL BE DEVELOPED IN FUTURE EDITION

SUPPLEMENTAL APPENDICES

WILL BE DEVELOPED IN FUTURE EDITION

A. Digital Governance

This section includes links and references the following AUS Digital Governance Standards

https://www.austintexas.gov/page/construction-and-design-resources-airport

BIM Standards:

Guide for developing BIM with AUS approved authoring software to produce, release, and receive data in a consistent format.

GIS Standards:

Guide for developing GIS to produce, release, and receive data in a consistent format.

Autodesk Construction Cloud (ACC) Standards:

Guide for utilizing ACC to produce, release, and receive data in a consistent format.

Asset Management Standards:

Guide for generating AUS Assets with data in a consistent format.

B. Tenant Design Manual

C. Sustainability

This section includes links and references to AUS Sustainability resources such as AUS Environmental Affairs web portal and Environmental Social Governance (ESG)

https://www.austintexas.gov/department/environmental-affairs