

Columbus Recreation and Parks Department Facility Design Guidelines

For

New and Renovated Facilities



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INTRODUCTION

Purpose: These Facility Design Guidelines ('Design Guidelines' or 'guidelines'), including their appendices and references, are intended to provide design architects and engineers in contract with the Columbus Recreation and Parks Department (CRPD) with guiding principles, conceptual design guidance, project requirements, department technical requirements, and other information to facilitate the efficient design, construction, and maintenance of CRPD facilities.

This document is a guideline to aid the designer in their design of a CRP facility. This document does not relieve the designer from their responsibility for the design. In all cases the designer is responsible to the authority having Jurisdiction to provide a code compliant and safe facility that meets all requirements associated with governing authority including but not limited to the Building Department, Fire Authority, and Health Department etc.

These guidelines are not a document that can be re-submitted to the Columbus Parks and Recreation in any form in lieu of an interim or completed specification. Portions of these guidelines are organized in the sequence of the CSI Masterformat for ease of navigation only – this does not relieve the design professional or their subcontractors from responsibility for complying with these guidelines in their entirety.

These guidelines may be used by the Columbus Recreation and Parks Department Staff or their designees as a tool or 'checklist' to review the work of a design professional and areas of specificity should be duly noted.

Columbus Recreation and Parks Department maintains multiple buildings and has certain areas of interest that these guidelines highlight. These guidelines do not relieve the designer from the responsibility to communicate with the project manager and maintenance staff regarding ALL aspects of the facility in question.

Certain items in these guidelines are topics that need to be explored diligently by the designer through careful conversation with planning, operations, and maintenance staff, as with all project related communication the designer is strongly encouraged to keep and share all directives with project participants.

Organization: The Design Guidelines are generally structured to follow the Construction Specifications Institute (CSI) Masterformat writing standard. In addition to the CSI Divisions 00-33 sections below which constitute the main body of the FDG, this introduction and a number of appendices provide amplifying guidance. This base document is intended to provide succinct and general guidance in a "bullet-point" format, but specific CSI sections and subsection headings are provided for ease of organization.

Principle Strategy: CRPD approaches all projects as a team, which includes department leadership, Design and Construction Section staff, communications and strategic planning team members, CRPD business unit representatives (such as Sports, Rentals, or Community Recreation), design consultants, construction contractors, other city representatives, and the construction manager. All team members will base their performance on the following strategic guidance of the Recreation and Parks Department:

Vision

A socially equitable city.

Mission Statement

“We connect the people of our community through the power of nature, wellness, and creativity.”

Values

Joy – Our programs and activities are fun, celebrate culture, and add to our quality of life

Nature – As stewards of the land, we invest heavily in conserving our natural environment

Legacy – Our assets are entrusted for generations to come, which is why we plan for tomorrow, not just for today.

Community – We embed in our neighborhoods, know our participants, and serve as a gathering place for all.

Open – We communicate in multiple languages, design for accessibility, program for inclusion, and hire to represent the people we serve.

Project Goals

- Create designs that represent the neighborhood and its citizens, and are welcoming to the community.
- Allow for flexibility over assumed facility life cycles of 50+ years. Many of our facilities have well exceeded this timeframe and continue to serve the community with no end-of-lifecycle planned.
- Incorporate sustainable principles that reflect the values of CRPD.
- Consider lifetime operating costs over up-front cost of construction when designing systems while being mindful of project budget and initial costs.
- Reduce maintenance requirements by judicious use of durable materials and methods.
- Integrate art and creativity.
- Create spaces which are welcoming, inclusive, and accessible, and that encourage community interaction and resilience.

Emerging Trends

The following are recognized by the staff at CRPD as trends which can guide the creative process for design professionals. Each of these trends should be considered throughout the design phases to guide the programming, layout, and features of a facility.

1. Technology – Free public Wifi, safety and security, education, programming, fun.
2. Partnership – integration with community groups, organizations; networking in the community.
3. Resilience – Ability of the facility to withstand disruptive natural and manmade events while continuing to provide critical community services.
4. Sustainability – See Appendix A
5. Diversity and Inclusion
6. Community Safety

Definitions & Acronyms

1. CIP – Capital Improvement Project; the City term for a large capital project
2. CMIS – Construction Management Information System; a City of Columbus information system used to track the progress of CIP projects.
3. Construction Manager – A third-party consultant acting on behalf of CRPD to manage the administration and inspection of the Construction phase.
4. CRPD – Columbus Recreation & Parks Department
5. Designer – This term is used to refer to the design consultant, which may be an Architect, Engineer, or other construction industry professional.
6. FDG – Facility Design Guidelines; This document, intended to guide the Designer through the design and construction of a CRPD project.
7. Project Manager (PM) – The CRPD Design & Construction Section member assigned sole responsibility for the execution of design and construction contracts. The PM acts on behalf of all future users of the facility, and the Designer is responsible only to the CRPD PM or their designated Construction Manager.

Asset Nomenclature

CRPD maintains an incredibly diverse asset portfolio consisting of over 120 facilities that are as varied as maintenance garages, community centers, golf course clubhouses, theaters, and park pavilions. In order to manage these assets, the department utilizes numerous software tools including ArcGIS, AssetPlanner by Ameresco, and Lucity asset management software. The following is a list of **asset types** with brief definitions:

- Sites - This is the primarily element in the asset hierarchy. Sites may contain some combination of all subsequent asset types.
- Parks - Property developed for recreational use.

- Buildings - Enclosed structures with MEP systems
- Pools - includes traditional pools and spraygrounds/splash-parks
- Park Structures - These include picnic tables, pavilions, gazebos, monuments, etc.
- Fields - Sports surfaces with grass or astroturf base
- Courts - Sports surfaces with asphalt or concrete base

In order to establish a Program of Requirements (POR) which dictates how these design guidelines should be applied to the different facility types, CRPD has established the following list of **building categories**.

- 4 - Maintenance Bldg
- 5 - Warehouse
- 6 - Health Building
- 7 - Recreation Center
- 8 - Shelterhouse (rental)
- 9 - Athletic Complex
- 10 - Golf Building (Proshop / Cart Barn / Landscape Garage)
- 11 - Pool Building Exterior
- 12 - Restroom Facility
- 99 - Other - Indoor Pool
- 99 - Other - Splash Park

Appendix I contains the detailed spreadsheet which relates each building category to the specific interior finishes and equipment which are appropriate.

These Guidelines primarily relate to Recreation Centers, but Design professionals shall recognize these broad categories and apply these design guidelines judiciously based upon the characteristics of the project when selecting equipment, finishes, and other building systems. That is to say, the restrooms in a premium rental facility will have different design considerations than a restroom open to the public in a city park.

PROJECT REQUIREMENTS

DIV 0 - The Design Process – Conceptual Guidance

- Project requirements and budget will be provided to the Designer in the form of a Capital Improvements Project (CIP) Data sheet. This document will serve as the initial Basis of Design (BOD) and should be reviewed between the design consultant and CRPD project manager.
- Depending on the nature of the project, CRPD may also prepare an Owner's Project Requirements (OPR) document which further refines the specific requirements of the new facility.
- The Architect of Record (AoR) or Engineer will develop the facility space in conjunction with owner's project requirements, the input of the CRPD project team, and these facility design guidelines. The facility definitions shall address the following:
 - Individual spaces
 - Space names
 - Use types
 - Space sizes and quantities
 - Relationship to other spaces
- The design process must take into account the building type and adjust the use of these guidelines appropriately. CRPD facilities range from gazebos and open-air shelters to pool and golf course accessory structures to 50,000+ square foot community centers. Not all guidelines will apply to all facility types; it is up to the designer to adjust according to the nature of the facility. Appendix I, space program of requirements, is provided as a general guideline.
- **Delegated Design, as applied to typical design-bid-build projects, is not preferred.** The use of contractor-provided design shall be minimized and approved by CRPD whenever call for.
- Other high-level guidance for the design process can be found in the 2014 CRPD Master Plan, CRPD Section Playbooks, neighborhood development plans, and various master planning documents associated with individual projects. Designer shall coordinate with the CRPD Project Manager for all conceptual guidance.
- **Building Inventory/Attic Stock / Inventory of parts:** Columbus Recreation and Parks Department Maintains a wide variety of buildings with vastly differing construction types and uses. The Columbus Recreation and Parks Department is staffed to provide immediate repair and maintenance of these facilities and cannot maintain unique attic stock for each building, whenever possible all components of all buildings should match so stock can be limited and replacement parts and components can be minimized - new buildings should be composed of standard components that are readily replaceable and obtainable locally.
- **System Element Matching:** Columbus Recreation and Parks Department facilities occupy a segment of buildings where building life cycle is long, capital improvements opportunities are limited, and short life cycle products aesthetic in nature become highly problematic to replace where products are matched in specific spaces (for example, matching ceiling tiles). Although aesthetics are important in many areas, pragmatism must be weighed in relation to specialty or fragile products as inevitably many products will be replaced when damaged and if matching

replacement parts are not available, often times a “similar” looking part will be used and any intended aesthetic look may be diminished.

- **Long Life of Components/ability to purchase parts:** Municipal entities, including Columbus Recreation and Parks Department are limited to purchasing replacement parts and components to vendors who hold contracts on a time limited basis – specialty products or non-local/common market sources should be avoided as often these parts cannot be obtained, or are problematic to obtain.
- **Component Durability:** Heavy use components and parts should be selected in all cases, the very nature of the buildings maintained by the Columbus Recreation and Parks Department is intended to be used by the public – heavily.
 - No light duty parts shall be accepted and all parts shall be assumed to be heavy use and need maintenance and replacement.
 - Building finishes should convey a sense of permanence and durability, be maintainable, and withstand a high level of wear consistent with heavy public use over a long period of time.
 - Avoid the use of paint/and or powder coatings at all high wear surfaces such as handrails. CRPD also prefers solid surface in lieu of plastic laminates at high wear surfaces as the greeting desk and sales transaction counters.
- **Sustainability:** Projects shall comply with CRPD sustainability goals. The project shall strive for compliance with the intent of USGBC/GBCI requirements as well as incorporating other meaningful sustainability features that can be incorporated within the project budget. Refer to Appendix A for additional information.

As a result of these concerns, a Standard Materials List is provided as Appendix G;

The Standard Materials List shall be used for selection of required materials and equipment

- Any deviation from these guidelines and supplemental owner project requirements must be documented as accepted by CRPD in writing (email acceptable).

DIV 00 – Processing the Work - Project Phases

- City of Columbus CIP projects are divided into the following phases:
 - Planning / Preliminary Design
 - Design Procurement
 - Detailed Design
 - Construction Procurement
 - Construction
 - Acceptance and Closeout

- Warranty Period
- The Design phase is further divided into stages as follows. These terms shall be used interchangeably
 - Schematic Design (SD) / Preliminary Design / 30%
 - Design Development (DD) / Detailed Design / 60%
 - Construction Document (CD) / Signature Stage / 100%
- Designers shall be required to submit specific information for plans and specifications at each step in the design phase. Detailed submittal requirements shall be determined in the Designer's contract scope of services. All submittal files should follow a consistent naming scheme as decided by the project manager.
- Construction delivery is assumed to be design-bid-build. (Note that at this time, city code restricts project delivery to D-B-B, however, there are plans to incorporate Design-Build and Construction Manager At Risk delivery methods in the near future). Designer is responsible for supplying detailed construction cost and schedule estimates to be utilized for comparing and approving bids and establishing Notice to Proceed (NTP) and contract completion dates.
- Designer shall be responsible for submission of building and zoning compliance exhibits and building permit documents as detailed in the scope of services. Designer shall ensure that all necessary permits are secured prior to the scheduled Notice to Proceed.
- Designer shall assist in developing a bid strategy and bid tab which details lump sum, unit price, allowance, alternates, and other procurement requirements.
 - Allowances should be provided, at minimum, as needed for:
 - FFE
 - Data and IT equipment / Connection to city fiber
 - Moving & Storage fees
 - Project signage
 - Utility Aid to Construction payments, capacity/connection chargers, etc.
 - Unforeseen conditions
 - Construction Inspection Deposit for sewer, water, and Drawer E work
 - BAS Systems Integration
 - Other third-party inspection contracts
 - It is preferred, and sometimes required, that CRPD legislate funds independent of the construction contract for these items. Design professional shall recommend amounts to be included with each project and discuss procurement with the CRPD PM.
- Once CD's are completed, designers should develop a pre-bid meeting agenda which addresses all bid criteria, allowances and alternates, unit prices, plans and specifications which may vary from industry standards, and other information which will assist bidders in preparing an accurate and thorough bid. Additionally, the pre-bid meeting agenda should review relevant schedules, phasing or sequencing, existing conditions, hazardous materials, or other special report topics as relevant to the project.
- Designer shall assist in responding to bidder questions and the preparation of Addenda, which may include bulletins, supplemental instructions, plan reviews, or additional design documents as needed.

- Designers shall assist in assessing substitution requests submitted by bidders for conformance to the basis of design items as listed in the bid documents.
- Designers should recommend prequalification requirements for bidders above the requirements of the City of Columbus Office of Construction Prequalification and assist in the selection of a qualified, responsive low bidder. If additional requirements are needed, then a checklist for bidders should be prepared and included with bid documents to assist the contractors.
- Designers will be required to produce a conformed set of drawings following the bid process, for issuance at construction contract execution, which integrates all addenda items, bulletins, supplemental instructions, etc.
- Designers will be required to produce the Statement of Special Inspections per OBC requirements.
- Designer will assist in approval of a Schedule of Values and subsequent review and approval of contractor pay applications.
- Designer will assist in responding to Contractor Requests for Information (RFI), issue Construction Change Directives (CCD) as necessary, prepare Requests for Proposal (RFP) for additional owner-initiated scope work, review contractor proposals, and issue contract Change Orders (CO).
- Designer shall periodically inspect the work for conformance to plan and spec, and will issue the Certificate of Contract Completion.
- **Designer is responsible for producing updated record drawings in the native CADD format following project completion, and furnish these files to CRPD.**
- Every project shall have its own set of AS-BUILT drawings. Multiple projects will not use the same set of drawings.
- Other design process topics to address as part of design scope negotiations:
 - BIM (See **Appendix E**)
 - Review submittal requirements – hard copies / digital copies / disposition of comments
 - Life Cycle Analysis
 - Prohibited drawings and specifications verbiage – “by others”, “mechanical”, etc.

DIV 01 – General Requirements

- In addition to addressing topics associated with CSI Division 01 – General Requirements, this section shall be used as a “catch-all” for design guidelines which do not fit neatly into the remaining CSI divisions.
- Designer shall include reference to the Columbus Construction and Material Standards (CMS), latest edition at time of bid opening. The CMS shall serve as the foundational technical specification for the project beyond state and local code requirements.
- CRPD maintains a facility-specific CMS Section 100 supplement. Design professional shall request the latest version from the CRPD PM, and this supplement should be included in its entirety in the project manual.

- CRPD maintains a library of Div. 01 supplemental specifications which can be provided to the Designer upon request, and should guide the designer in developing project-specific general requirements. **Designer shall discuss with CRPD each of these topics to be included with project general conditions specifications:**
 - Work restrictions at the site and site access
 - Allowable working hours
 - Coordination with occupants and shared use of the site
 - Project and temporary utility sources
 - Meeting requirements
 - Construction progress schedule (Primavera P6 requirement)
 - Site security
 - Project signage and other temporary site signage
 - Mandatory use of CMIS for processing submittals, change orders, pay applications, and other project administrative requirements
 - Field office
 - Tree and plant protection

- **Project Closeout Considerations**
 - Substantial vs Final Completion – project specifications shall clearly define these terms and require their designation in the project schedule and articulate their usage in regards to City-caused compensable delay. Care must be taken by the Designer to reduce owner-caused delays which may result in excessive compensation to the Contractor. See CMS Section 108.06 and 109.05.
 - O&M manuals - specify one printed copy for the facility and one printed copy be delivered to O&M warehouse at 1533 Alum Industrial Dr. Electronic copy to be delivered to PM for upload to CRPD file server.
 - Record Drawings - specify one printed copy for the facility and one printed copy be delivered to O&M warehouse at 1533 Alum Industrial Dr. Electronic copy to be delivered to PM in PDF and native format.
 - Mechanical room should contain a desk and cabinet for storage of record plans/manuals.
 - Designers shall provide floor plan(s) on an 11x17 format with all egress paths indicated by a red dashed line leading to a clearly labeled exit.
 - Warranties – All warranty information shall be consolidated into a single section within the O&M documentation.
 - Attic Stock / Spares - As part of developing specifications, Design Professional will address the inclusion of spare stock for specialized (non-standard) building components. Specify that materials are delivered to 1533 Alum Industrial accompanied with detailed inventory listing at minimum; product name, description, building/project association, CSI division, make, model, serial number, unit type and quantity, dimensions, and approximate weight.

- Demonstration and Training - determine which systems require only familiarization and which are new to the department and require full training. Also determine if video recording is necessary or desired.
- Contractor should be responsible for furnishing a consolidated routine for all preventative maintenance requirements for all building systems. This will be used to input facility maintenance requirements into the department asset management / work order tracking system.
- **Facility Design Issues**
 - Designers should consider special events and after hour usage in addition to regular daily programming. Therefore, functions that may require afterhours access, such as public meeting rooms, should consider close proximity to public entrances to simply access and security while providing the ability to close-off access to other areas of the facility.
 - Durability - Heavy use components and parts should be selected in all cases, the very nature of the buildings maintained by the Columbus Recreation and Parks Department is intended to be used by the public – heavily. No light duty parts shall be accepted and all parts shall be assumed to be heavy use and need maintenance and replacement.
 - Lifecycle / Replacement Part Availability - Municipal entities, including Columbus Recreation and Parks Department are limited to purchasing replacement parts and components to vendors who hold contracts on a time limited basis.
 - **Designers are to provide a bullet-point list summarizing all intended building energy efficiency features to CRPD prior to finalizing the CD's. The list should only include those items that exceed current code requirements.**
 - Minimum dimensions and areas:
 - Stairs to access mechanical spaces must be a minimum of 5' wide
 - A minimum 3' clearance around all domestic and fire water entrance pipes and appurtenances (meter, backflow preventer, bypass piping, isolation valves, etc) must be provided.
 - Lavatory chase spaces must be a minimum of 42" wide
 - Products or non-local/common market sources should be avoided as often these parts cannot be obtained, or are problematic to obtain.
 - Daylight is desirable and should be used in general purpose areas where appropriate. Consider daylight harvesting controls where demonstrated payback would merit CRPD consideration.
 - Designers may be asked to provide input on Furnishing, Fixtures, and Equipment (FFE). The contractor may or may not be required to include FFE procurement as part of the construction contract. Designers should raise this issue during the planning phase. See **Appendix C** for further information.
 - Accessibility - in addition to OBC requirements, designers should ensure that all building programming can be conducted with accessibility as a consideration, and shall make recommendations to CRPD on how design can go above and beyond code requirements,

leading toward universal design, inclusive of all people and abilities. Specifically, accessibility requires providing at least one accessible public and staff workspace at each public counter and an accessible route to each unique or primary program component.

- Maintenance - Designer shall ensure untroubled access to building systems for maintenance personnel. In addition, designers shall:
 - Provide easy access to utility equipment for building maintenance, including entering and leaving building.
 - Ensure doors are large enough to provide clearance for equipment
 - No vertical ladders allowed for access for routine maintenance (i.e., provide steps to mechanical rooms and roof access; 'ships ladders' are prohibited.
 - Avoid equipment above ceilings. If unavoidable, review situation with CRPD.
 - If locating equipment in a gymnasium ceiling space, access ladders and platforms for routine maintenance must be included. Cannot rely on manlifts for routine tasks.
 - Provide permanent maintenance platforms around equipment if above ceilings.
 - Try to avoid equipment on roofs, provide separate mechanical rooms if possible.
 - Provide separate boiler and electric rooms.
 - Provide adequate clearance to reach water shut off valves.
 - Require placement of color-coded stickers on drop ceilings for location of all controls, dampers, VAV boxes, etc. that are behind ceiling drop-panels.
- **Additional Topics** - CRPD shall be consulted on the following relating to facility operations shall be discussed with CRPD during the design process:
 - Room numbers – room numbers and naming terminology should correspond with CRPD terminology.
 - Window treatments/Storefronts – Specific requirements for usage and durability. Designers should schedule a meeting to coordinate this issue with CRPD staff.
 - Noise and Vibration Control
 - Custodial Requirements – The building design shall allow for routine maintenance to be completed by facility staff without undue difficulty or expense.
 - Ladders & roof access – roof ladders are prohibited (see "Maintenance" above).
 - Mail – Delivery access for parcel and courier deliveries will typically be at the main entrance. No dedicated mail room is required.
 - Loading Docks – If needed, the delivery (receiving) area floor finish should be sheet rubber flooring or equal approved by CRPD.
 - Bike Racks – Bike racks should be included and indicated on the site plan. Rack location(s) should avoid infringing on normally required walking path widths.
 - Trash / Recycling / Dumpsters – Enclosures should be easily accessible. See "Site" section for additional guidance.
 - General Building Security – Please see "Security" section for additional guidance.
 - EV Charging - Plan for future infrastructure, need to consider separate meter but balance with added demand charges

Room-specific Guidance**○ Lobbies**

- Flooring should be polished and sealed concrete or luxury vinyl tile with minimum 20 mil wear layer similar to Mohawk or Amtico, type as selected by CRP. See Div. 3 - Concrete for detailed information on concrete finishing requirements if applicable. Epoxy terrazzo is an acceptable floor finish in this area if the budget permits and should be considered on a case by case basis.
- Strategically placed, clear, and legible graphics and signage, visible upon entry, will provide participants with information about where to find various functions and how to get there. Wayfinding techniques shall provide visual cues about the location of important spaces and services.
- Some seating with visibility of exterior vehicular waiting/ drop-off lane should be provided for public use.
- Controllable/ controlled natural light is desirable in all public areas.

○ Classrooms/Meeting Rooms

- The placement of meeting rooms should be carefully studied to support the other activities when not in use for meetings, while maintaining proper separation of meeting spaces from activity areas.
- Meeting spaces should have reasonable access to network data and electrical power for powering portable computers and other personal electronic devices.
- Some large meeting spaces may be equipped with conferencing microphones/ speakerphones, amplifiers and an AV control panel.
- Expected uses for the meeting spaces include training, community meetings, and after-hours educational use.
- Acoustically, meeting rooms should use reflective front walls. The floor and ceiling should have moderate sound absorption ability, and the rear walls should be highly absorptive. The movable partitions/ operable walls separating the meeting rooms from public areas should have an STC rating of 50 or greater.
- Meeting rooms are preferred to be located near public lobbies. Design should assume after-hours use of the meeting rooms, allowing this space to be used while controlling access to the remainder of the building.
- Depending on the configuration of the meeting room(s), consider implementation of impact resistant finishes or wall fabrics at chair level.

○ Art Rooms/Studios

- Where possible, use a repeatable space module for each participant to allow future changes to the studio uses based on changing trends in usage.
- Individual creative stations should have direct access at each station to power, water and air ventilation.
- Design the HVAC system in the studio spaces for “close to source” air venting of dust, solvents, and contaminants.
- Floor finishes to be exposed sealed concrete.
- Wall finishes to be highly durable, such as epoxy painted concrete masonry units.

- Each studio space needs adequate storage space for items “in-process” of being created.
- Participant storage for personal items may be in the form of lockers or bins.
- **Gyms**
 - TBD
- **Wellness/Fitness Centers**
 - TBD
- **Restrooms**
 - Toilet partitions are to be solid phenolic or FRP; metal and plastic are not allowed. Shall be floor mounted and overhead braced with T bar; heavy duty and/or stainless-steel connection hardware required. panel color as approved by CRP to resist showing wear and abuse.
 - Wall-mounted elongated toilets with heavy-duty carriers are preferred in heavy-use public restrooms which include a maintenance chaise. Floor mounted elongated bowl toilets are allowable in small and staff bathrooms.
 - Flooring to be ground sealed concrete. Concrete sealer should be selected to resist urine. Refer to separate **Appendix C** outlining the specific concrete finish standards to be used including level of slab grinding.
 - All wall finishes are to use a cleanable porcelain or ceramic tile finish to approximately 7' a.f.f. Six inch (6") high medium to dark gray porcelain or ceramic tile cove base to be used.
 - Public restroom ceilings shall be lay-in ceilings or gypsum board. If a gypsum board ceiling is designed, provide appropriate maintenance key access panels for any items requiring maintenance access.
 - Provide solid surface countertops.
 - Soap dispensers to be sized for bulk filling, wall mounted.
 - Provide a single large shared mirror for all sinks meeting ADA mounting height requirements.
 - Hand dryers are preferred in main public restrooms. Paper dispensers may be used in smaller restrooms, when needed for art rooms or other programming needs, or when requested at rental facilities.
 - Hand dryers to be located adjacent to or in sink to minimize dripping of water on the floor and preventing potential resulting slip/fall hazards. Public restroom hand dryers are preferred to paper towel dispensers. Provide solid surface or other impervious cleanable wall backing behind hand dryer down to base or counter.
 - Provide under-counter electrical service to lavatory plumbing wall for use in future soap dispensing and hand drying.
 - Provide a hose bib near floor drain in each heavy-use public restroom with a locking access cover, unless a mop closet in in close proximity.
 - Provide vandal resistant screws on floor drains, cleanout covers, electrical outlets and wall plates.
- **Storage Area**
 - TBD

- **Family/Nursing Rooms**

- Flooring to be sheet durable rubber product similar to Nora Environcare. Options for base are either coved sheet rubber with all cuts welded/sealed to the sheet flooring or coved rubber to a height of six inches (6") above finish floor.
- Inclusion of adult-size changing table in family restroom or nursing room is strongly desired, unless unfeasible for a compelling reason.
- Use a cleanable porcelain or ceramic tile finish to approximately 7' a.f.f. on the wet (fixture) wall only.
- Provide solid surface countertops.
- Provide a single large shared mirror for all sinks.
- Provide a wall storage unit for storage of misc. toiletries and small supplies.
- Provide a conveniently located shelf near the sink or adequate counter space.
- Provide a wall mounted paper towel and soap dispenser adjacent to the sink.
- Provide baby changing station, basis of design shall be Bradley 962 stainless steel baby changing station surface mounted or recessed.
- Provide multiple coat hooks on inside face of door or elsewhere as appropriate.
- Provide space for an extra-long diaper changing counter if conveniently located hook for diaper bag cannot be provided.

- **Kitchen**

- Ground and sealed concrete floor finish.
- Provide solid surface counters and cabinet fronts.
- Towel dispenser should be as close as possible to sink while remaining accessible.
- Provide for seating capacity as defined in the space program.
- Flooring and base to use same materials as Family/ Private Restroom.
- Provide "gooseneck" series faucets, with wrist blades without side sprayer option.

GENERAL DESIGN GUIDELINES BY CSI MASTERFORMAT DIVISION

DIV 02 – Existing Conditions

- Designer should coordinate with owner to identify salvaged equipment to be retained and stored in CRPD warehouse

DIV 03 – Concrete

- 03 35 00-000 | Polished Concrete (Interior) Finishing
 - Polished concrete flooring is preferred for non-athletic public spaces with anticipated high traffic.
 - Dyes and patterns are to be used to improve aesthetic appeal, subject to the review and approval of CRPD
 - Designer shall recommend a level of cut and sheen to compliment the facility interior.
- Barrier One or approved equal porosity inhibiting admixture shall be included in concrete slabs below sports flooring.
- Exterior Concrete
 - The use of buff-washed concrete is not recommended due to the lack of durability in the presence of deicing salts.
 - The use of stained concrete or brick pavers is not recommended.
 - Extruded (surface set) concrete curbs are not recommended due to a lack of durability.

DIV 04 – Masonry

- None

DIV 05 – Metals

- (See Div. 9 – for metal finishing guidelines)

DIV 06 – Wood, Plastics, & Composites

- None

DIV 07 – Thermal & Moisture Protection

- Roofs
 - The basis of design for roofing products is Garland. CRPD roofing and warranty information is stored in a Garland database that will be made available to consultants. Roof designers will coordinate with CRPD and the roofing consultant when selecting roofing systems. All roof products and systems shall be approved by CRPD.
 - Flat Roofs:
 - 8'x8' sump should be included around all drains
 - All condensate lines should run to a drain.
 - Gravel preferred over white coating
 - If ballasted roofs are proposed by the designers, CRPD will expect that the site conditions will be evaluated for wind scouring so that the ballast does not become airborne.
 - Sloped Roofs:
 - Metal is recommended for sloped roofs.
 - Roof Equipment:
 - Where roof mounted equipment must be used, provide; appropriate permanent access, safety enclosures, and walking surfaces designed to protect the roof system.
 - Insulation:
 - Provide drainage layers above and below the insulation layer.
 - Select closed cell insulation materials and substrate materials (such as protection boards) that will not deteriorate due to interior or exterior vapor intrusion or condensation.
 - Protect insulation during construction to avoid damage and crushing that can lead to ponding.

DIV 8 – Openings (Doors and Windows)

General

- The exterior design of the completed building should clearly indicate the location of the public entrance. At 30% design (Schematic Design), identify all doors required for means of egress. Identify all doors that will have exterior operable trim and which shall have handle/trim recessed in the door body. At 60% design (Design Development), provide complete hardware schedule.
- At meeting rooms or any other areas opening out to a corridor, provide door closers with full opening range of motion and hold open to allow the doors to swing past 90 degrees (180 degrees preferred) as to not impede the flow of participants in the corridor. Provide stops as required to protect any adjacent glass or wall surfaces

- All Exterior doors shall open 130 degrees minimum and 180 degrees if possible with the door closer attached.
- All doors shall be no less than 3'-0" wide.
- Coordinate the door type used with the location, width and depth of the vestibule relative to interior program functions such as the reception desk to ensure staff and participant comfort. Functions located close to the entrance doors may require the use of supplemental design strategies such as unit or radiant heaters or deeper vestibules to ensure occupant comfort.
- All mechanical room doors must be sized to accommodate removal of mechanical equipment. If not possible, Design Professional will coordinate selection of equipment to meet this need. The Owner will not be responsible for any demolition or remodeling because of oversized equipment.
- Access doors shall be provided when needed at plumbing chases and in ceiling areas. Coordinate with plumbing and HVAC contractors. Any changes need approval in writing by CRPD.
- Specifications to include provisions for a turnover meeting of keys to include building walkthrough with testing and demonstration of all hardware.
- Specifications shall consider inclusion of a mandatory adjustment of all door hardware to occur six months following substantial completion.

Accessibility

- All new facility spaces shall comply with 2010 ADAAG (ADA) provisions, with additional requirements as applicable to public facilities and local code requirements.
- Access to all program areas and services is required for those restricted to using a wheelchair. Accessibility requires providing at least one public and staff workspace at each public counter and an accessible route to each unique or primary program component.
- Door closers to comply with ADA opening force requirements. Provide closers with a full opening range of motion and hold open at mechanical spaces in the building to minimize door encroachment on circulation paths.
- At certain locations where participants in wheelchairs or walkers maybe expected, such as at studios and group meeting spaces, consider roughing in electrical service to entrance doors for future installation of powered doors using standard accessible opener activation plates.

Doors and Hardware

08 10 00 | Doors

- Door hardware is an area of special interest to the Columbus Recreation and Parks and all consultants should be mindful that there are specific hardware requirements desired and prohibited by CRPD standards. Columbus Recreation and Parks Facilities shall be supplied with door hardware that is compatible with the existing facilities, the vendors available to the Columbus Recreation and Parks Staff, and where spare parts are easily obtained through the facilities maintenance suppliers. See Standard Materials List for all materials to be specified.
- All installations shall be warranted by the installing contractor for 1 year from final owner acceptance.

- All exterior doors shall be fiberglass, reinforced plastic unless otherwise specified by CRPD. Steel or aluminum doors can be substituted with owner approval.
- All other aluminum doors and frames are prohibited unless approved by CRPD. If aluminum frames are to be used, designer is to schedule meeting to discuss thickness, geometry, and other heavy use strategies with designated CRPD staff.
 - Solid headers with maximum reinforcement are required, particularly when center mullions are used.
 - Increased structural support shall be incorporated around frames to increase stiffness of the wall system.
 - Steel reinforcement should be used on the hinge side of door frames, where possible.
- All exterior doors with glass and sidelights shall consider durability. Break resistant options shall be discussed with the owner.
 - Doors requiring full-length glass should have a minimum of two panels, with a solid panel located at mid-level.
 - Glass inserts in doors should be as narrow as required for the application (lighting, safety, etc.). Generally, interior doors should not require full-width glass.
- All door panels shall be a minimum of 14-gauge steel with interior reinforcement a maximum 6" center. 16/18 Ga not allowed.
- All interior doors shall be wood or metal. Heavy metal doors shall have fully welded edges.
- All interior doors shall have 14+ gauge steel (welded) or reinforced aluminum construction.
- All doors over 3'-0" width or standard height shall have four (4) hinges or more hinges.
- Hinges - use heavy-duty ball bearing (5 knuckle, full mortise, NRP).
- Provide welded hollow metal frames. Knock down frames are not to be used. Standard door frames are not permitted, heavy duty only.
- Exterior frames are to be flush with the exterior surface; avoid conflicts between open doors and protruding architectural details such as water table masonry.
- On door frames, CRPD must approve the location of the window.
- Multiple Exterior doors shall have fixed mullion separations, except at least one pair of doors shall have a removable mullion for equipment. Location will be specified by owner in writing.
- Field measurements must be taken. File blueprints cannot be considered accurate. The Owner will not be responsible for change orders due to incorrect or assumptions made by either the Design Professional or the contractor.
- On new construction, concrete shall be poured through the door frames at least 2" to prevent frames from shifting.
- Thresholds are to have solid concrete to sit on at least 8" beyond the threshold area; no seams or expansion joints beneath thresholds.
- All door frames and doors shall be plumb and level before acceptance. There shall be equal spacing around the door between door and frame. Owner must approve any cutting of brick or block to widen the opening for the new frame in writing.

08 70 10 | Hardware

- All doors shall have Latch Guards, approved by CRPD.

- All exterior doors shall have locking bars as specified by the owner.
- Interior Door Stops shall be wall mounted within 8 inches from top of door. Interior walls must be blocked to provide for solid mounting. Molly bolts / plastic wall anchors will not be accepted. Stops must be screwed directly to blocking.
- Swing opening should be a minimum of 135 degrees with 180 degrees preferred. When exterior doors cannot open to 180 degrees, exterior Door Stops shall be 4" steel pipe at 36" above ground, a minimum of 30" below ground, and a minimum of 12" inside door edge when door is open. Pipe will be concreted in and filled with concrete with a rounded cap.
- Door hardware and associated hardware finishes to be approved by CRPD prior to issuance of bid sets.
- All interior wood doors to have kick plates on the push side, brushed stainless steel or aluminum preferred. Also provide kick plates on doors at the mechanical, electrical and data rooms and on both sides for any wood or hollow metal doors opening into corridors. Full glass light aluminum doors do not require kick plates.
- Panic hardware shall only be used when required by code and shall be approved by CRPD prior to issuance of bid sets.
- Exit devices should use a dogging device (allen wrench operated), not keyed cylinders, for dogging.
- No concealed hardware, unless approved by CRPD in writing.
- If doors are provided at public restrooms, the door hardware shall be non-locking.
- Lock blocks / hardware blocks required for all doors (FRP, wood, and heavy metal).
- Additional clamps shall be installed on surface mounted hardware.
- Power driven anchors are prohibited for anchorage of any materials.
- Door hardware sets should be compatible with removable key cores and keyways selected as standard by CRPD.
- Door locks should use standard InstaKey lock cylinders only.
- All hardware and locksets must meet ADA requirements.
- When needed, emergency exit door hardware should be keyed to the master key system and go into alarm when the door is opened. Provide Detex-style alarm in addition to Von Duprin panic bar without alarm.
- Exterior recessed handles (level trim interior) standard for miscellaneous exterior. Eliminate trim on exterior where not needed. Applications may vary depending on use and placement of door. Exterior doors serving only emergency egress purposes shall use blank trim on the exterior side for enhanced security.
- No internal concealed vertical rod devices or fire exit mortise devices. No vertical rods. All rim devices to be used with mullions.
- STRIKES: Top and bottom strikes for exit devices; through bolts on all top-bottom latches for exit devices.
- DOOR CLOSERS: Hold open, cushion stop, and parallel arm may be used. Use hold open-spring cushion where applicable. Use through-bolts on mounting door closers, interior and exterior.

08 40 00 | Entrances, Storefronts, and Curtain Walls

- The durability of these components are of significant concern to CRPD. Each of these systems, if proposed, shall be discussed in depth with CRPD project manager and O&M personnel.
- Rigid structural components such as knee walls shall be used adjacent to storefront systems to enhance rigidity. Geometrical configurations shall be discussed with and approved by CRPD staff.
- Preference is to keep all storefront frames 12"-24" above grade to avoid damage from mowing equipment, kicking, etc..
- Doors shall be located adjacent to rigid structural members and not 'float' with storefront frame on both sides.

08 50 00 | Windows

- Windows shall be sized with ease of replacement in mind, ideally no larger than 3'x5' per section. Maximum allowable size in any dimension is 48", and no larger than 4'x8' is preferred.
- Exterior glazing should promote transparency, especially promoting exterior views to showcase interior activities.
- The use of reflective coatings, frits or applied films should be studied for impacts on eye level views and the transparency of the interior.
- Where the design needs to reduce operating costs by reducing heating and cooling loads, consider strategies such as exterior shading (both exterior and landscape based), careful limitation of glazing and selective use of glazing films (and coatings).

DIV 09 – Finishes**General**

- Finishes shall be selected for durability and ease of maintenance. See Div. 00.
- See **Appendix I** Space Program of Requirements for preferred schedule of interior finishes.
- High-traffic areas or areas subject to carts or other rolling equipment shall have impact resistant surfaces and corner guards. Specifically:
- Provide wall corner guards or other products with a similar level of performance for vertical gypsum board corners.
- Provide bumper rails or surface applied finishes such as Xorel or Acrovyn where required to protect wall finishes from damage due to seating adjacent to walls (such as at meeting rooms) or other similar traffic.
- Provide upgraded wall material impact resistance in areas of the facility that will receive heavy wear using impact resistant gypsum board or other products with a similar level of performance. Consider abrasion resistance and cleanability of wall finishes in all areas, coordinate locations specifically with CRPD prior to completion of bid documents.

09 30 00 | Tiling

- none

09 50 00 | Ceilings

- For required acoustical tile ceiling manufacturers, see Standard Material List
- Acoustical tile ceilings should be selected to minimize the different types of tiles being used. Use minimum grid dimensions of 2' x 2'. Enlarge grid dimensions where above ceiling equipment servicing dictates the need for more working room. Avoid the use of kerfed tiles that interlock with the suspension grid at areas where mechanical service access will be required.

09 60 00 | Flooring

- Floor finishes in public areas adjacent to the entrance are expected to provide high wear and good slip resistance expected during winter/ wet weather conditions, while being easy to clean. Polished concrete is generally the preferred floor surface. The slip resistance of the recommended flooring finish should be carefully reviewed in such entrance areas. CRP to provide supplemental changeable surface “walk-off” carpet mats at entrance vestibules as required.
- Carpet and resilient tile flooring are generally not preferred, but if utilized then must be installed such that damaged sections can be easily replaced. Specifications should require one additional box per 25 boxes installed of each color.
- Carpet tile is typically standard in rental facilities and low-traffic areas.
- Cove base or moldings should fully cover all expansion joints or other material inconsistencies at wall/floor/material transitions
- Wall base products in public areas should be equivalent in performance to heavy duty rubber base.

09 90 00-000 | Painting and Coating

- Paint is generally preferred over wall coverings.
- Colors are to be recommended by the Design Professional and approved by CRPD prior to bid.
- Interim submittals will be used to verify owner requirements and align expectations between CRPD stakeholders. Submittals shall include at minimum:
 - 30%: identify areas to receive painting on a room finish schedule and key graphically on a floor plan.
 - 60%: illustrate on plans specific colors and finishes for all spaces to receive paint and provide a preliminary specification for paint.
 - 100%: Specifications; complete written specifications for all elements to receive painting and a complete room finish schedule with manufacturers sample colors, closeout, warranty and spare material.

- All metal surfaces shall be sprayed (door jambs, window frames, doors, railings and steel beams, etc.)
- Paint on floors shall be epoxy, non-skid.
- Primer is to be used on metal and wood, one coat tinted a different color than the finish coat.
- Finish Coat to be two coats minimum. (NO EXCEPTIONS)
 - Finish on walls shall be eggshell or satin.
 - Finish on frames, doors, railings and beams shall be semi-gloss.
- Specification shall include furnishing of no less than 1 gallon of each material applied.
- Paints shall be no-VOC or low VOC as approved by CRPD.
- Due to current local availability, Glidden or Sherwin-Williams is preferred.
- Review sample wall color benchmarks in the field prior to ordering and application of paint colors. Owner to approve final colors from field benchmark prior to contractor proceeding with application.

DIV 10 – Specialties

General

- Interior signage to comply with all code requirements at minimum. Designer shall hold a meeting with CRPD representatives to discuss additional wayfinding signage, building signage, interior graphics, or other divisions 10 specialties as required by the building program.
- Interior Signage shall seek to be inclusive and consider appropriate languages, font size, colors, and other elements to promote inclusivity. For additional signage guidance, see Appendix F.
- Doors for electrical, mechanical, chemical, fire, and communications systems shall be clearly labeled.
- A building plan/map should be provided showing room numbers, suitable for posting in public spaces.
- Salvage all existing dedication plaques. New dedication plaques shall use the CRPD template available upon request from the CRPD PM.
- CRPD stocks most toilet and bath accessories. Designer should confirm with CRPD representative which accessories are to be provided and installed by contractor and which to be installed by contractor from warehouse stock. Toilet accessories shall be verified to accept the consumables stocked in the CRPD warehouse.

10 20 00 | Interior Specialties

- Dividers and/or partitions shall be utilized where there is opportunity for flexibility with public spaces (gymnasiums, auditoriums, conference rooms, etc.) Consideration should be given to AV systems, lighting and lighting controls, and other building systems where room separations may occur.

10 21 13 | Toilet Compartments

- Interim submittals will be used to verify owner requirements and align expectations between CRPD stakeholders. Submittals shall include at minimum:
 - 30%: illustrate on plans; compartment locations and quantity. If applicable indicate existing system, make model and components, entity with service contract as well as any expansion or integration features present.
 - 60%: provide product specifications indexed to drawings.
 - 100%: Specifications; complete written specifications for all elements of the toilet compartments.
- Toilet partitions are to be solid phenolic or FRP; metal and plastic are not allowed. Shall be floor mounted and overhead braced with T bar; heavy duty and/or stainless-steel connection hardware required. Panel color as approved by CRP to resist showing wear and abuse.
 - No metal or laminate partitions.
 - Hardware and accessories to be stainless steel
 - Note that all anchors are to be installed into structural elements or solid blocking
- Wall-mounted elongated toilets with heavy-duty carriers are preferred in heavy-use public restrooms which include a maintenance chaise. Floor mounted elongated bowl toilets are allowable in small and staff bathrooms.
- Flooring to be ground sealed concrete. Concrete sealer should be selected to resist urine. Refer to separate **Appendix C** outlining the specific concrete finish standards to be used including level of slab grinding.
- All wall finishes are to use a cleanable porcelain or ceramic tile finish to approximately 7' a.f.f. Six inch (6") high medium to dark gray porcelain or ceramic tile cove base to be used.

10 70 00 | Exterior Specialties

- Flagpoles shall be provided with external halyard capable of being locked with an external padlock (no cam lock).
- Flagpoles shall have dedicated lighting as required for flying of flag past sundown.
- Design landscape and building elements to prevent or mitigate unsightly damage by vandalism, birds, trash, transients, or skateboards.
- Consider the placement of trash receptacles, flagpoles, bike racks, seating and other site amenities in the site design.
- Illuminate site perimeters, walkways, and drives while using low cut-off angle fixtures that minimize night-time sky glare. Where pole lighting is required, provide LED type as approved by CRPD.
- All at grade mounted site lighting fixtures should be specifically reviewed with CRPD for durability of the fixture and ease of re-lamping with a minimized number of lamp types.
- Design landscaping based on mature heights/widths, sightlines and locations of landscaping elements. Coordinate mature landscaping tree/shrub sizes with security camera placements.
- Select landscape plantings well adapted to the particular locations in which they will be placed. Avoid plant material that will require supplemental watering after becoming established. Avoid compaction of site soils in planting beds or over root zones for existing established plant material.
- Avoid the use of landscape stone large enough in size to be used as a thrown object that could be used to either damage buildings or to cause harm to others.

10 80 00 | Other Specialties

- Knox Boxes - Install as required by local fire code and in accordance with Columbus Division of Fire Knox Box Checklist (email CFDknoxrequest@columbus.gov). Prefer recessed models.
- Provide a mop/ bucket hook in each janitor's closet.
- Emergency evacuation plans are to be included in the interior signage work scope. Permanent plan to include locations of fire extinguishers, fire pull stations and emergency exit paths.
- Where directed by CRP, provide for multi-lingual signage and communications. In addition to English, other languages to be used may include Spanish and Somali.

DIV 11 – Equipment

- Facilities safe shall be included where required by owner, see *Standard Materials List*
- Television mounting brackets: per *Standard Materials List*
- Basketball backstops: Discuss if included with project scope.
- Scoreboards: Discuss if included with project scope.
- Curtain Dividers: Discuss if included with project scope.
- Art Rooms: Discuss if included with project scope.
- Athletic & Recreational Equipment: Discuss if included with project scope.
- Kitchens:
 - Preferred commercial refrigeration units: per *Standard Materials List*
 - All appliances shall be selected based on availability of local companies to service/repair.

DIV 12 – Furnishings

- Kitchens shall be designed to accommodate ADA access with a minimum 4.5' of clear space in front of ovens are around other equipment.
- Designer to utilize list of preferred kitchen equipment, updated and maintained by CRPD Fiscal section.
- Art installation: See Appendix B
- Durable, low maintenance seating should be provided. No open weave fabric upholstery should be used on any public seating. Coated, bleach cleanable fabric coatings shall be used.

12 20 00 | Window Treatments

- Where required to control glare and heat gain, provide roller shades at exterior windows. Roller shades are allowable at rental facilities and in staff areas. When located in publicly-accessible areas, automated shades shall be used at elevations sufficiently high to avoid vandalism.

- Also See section 08-50

12 30 00 | Casework

- none

12 50 00 | Furniture

- See Appendix C FFE

12 66 13 Telescoping Bleachers

- Discuss if included with project scope.
- When installed, access must be provided to sides and rear of bleachers to facilitate preventative maintenance and repairs.

DIV 13 – Special Construction**13 11 00 | Swimming Pools:**

- Spraygrounds should be designed to simplify winter maintenance. No requirement to use stand-alone sump pumps for removal of melt water.
- Ductwork in chemical/mechanical rooms shall be stainless steel.
- Provide freeze protection heating within pump room
- Prefer interior doors for chemicals in pump room with separate electrical room
- Consider BAS requirements for monitoring of pumps in pump room.
- Water Treatment for outdoor pools: Neptune brand sand filters used, with Poolcomm CAT 5000 chemical control and Stenner pumps and UV treatment (Aquionics)
- Water Treatment for indoor pools: Consider Regenerative Filtration for indoor pools, and Myrtha systems for walls.
- Do not need to heat pool water
- 10' high security anti-climb fence
- Consider Nighttime lighting requirements, mounted on pool buildings, minimal lighting needed throughout interior of pool space. As of 2022 no extensive lighting required for operating the outdoor pools after dark.
- Provide burglar alarm on bathhouse no fire alarm system needed with current size/use of space
- Consider AV/paging/speaker systems with in bathhouse.
- Provide security cameras at entrances of bathhouse – main entrance/exit, changing rooms and parking lot. Not required to monitor pool water
- Need people counters, but not turnstyles
- Consider Drains and area wells for hydraulic stabilization when pool is not filled
- Prefer above grade storm detention.

DIV 14 – Conveying Equipment

14 20 00 Elevators: Discuss if included with project scope.

- A larger capacity elevator is preferred for the purpose of accommodating deliveries, including supplies and materials, furniture, computer and office supplies, equipment, and consumables.
- Specify additional one year service warranty over and above initial warranty
- All City elevators are to be Otis, electric traction belt driven (Hydrofit) with GAL controllers
- Include additional circuit boards as attic stock.

DIV 21 – Fire Suppression

General

- Specifications to ensure that:
 - Alarm devices are received in good physical condition.
 - Control valves are open and properly sealed, locked, or supervised.
 - Gauges are in good condition and indicating proper water, air or nitrogen pressure.
 - All water flow devices, water monitor alarms, electric alarms are tested prior to acceptance
 - Plan location of fire department connection (FDC) piping to be out of public areas.
- Provide outside electric alarm.
- No proprietary fire or security systems allowed (i.e. Siemens, simplex, Edwards), see *Standard Material List*
- Fire extinguisher cabinets to be recessed or semi-recessed wall mount type, white cabinet with vertical glass lite. Coordinate cabinet locations and door handing to remain accessible after the building has been furnished.
- Cabinet type, no service lock or handle glass break. Use Plexiglas for windows. Extinguishers to be dry chemical, tri-class, 10 ABC rated minimum. CRP will provide and install fire extinguishers going into the fire extinguisher cabinets per their existing service provider contract for monitoring and replacement of extinguishers as needed.
- Coordinate extinguisher types and capacities for higher hazard areas, such as the kitchen (type B or K, depending on cooking efforts) and recording studios or electronic/it/ security studios or closets (nonconductive/dry chemical)

21 05 53 | Identification for Fire Suppression Systems

- Permanently Label all elements of the fire suppression service, including but not limited to; Water Service Entrance, Drain, Test Connection.
- All Fire Suppression Mains shall be painted red in mechanical rooms and locations not visible to the public, or so as not to be visually distracting.

21 05 29 | Supports and Anchors for Fire Suppression

- All supports for the fire suppression system shall be in compliance with the pipe manufacturer's recommendations.
- Fire Suppression piping shall be hung from the building structure, no hanging from decking or cold rolled elements.
- No other trade shall attach to the fire suppression hangers, piping or any elements of the fire suppression system.

21 10 00 | Water Based Fire Suppression Systems

- All sprinklers will be quick response type. Sprinkler in finished ceiling areas will be recessed pendant type. Sprinklers in non-finished / exposed structure areas will be brass upright.
- Pre-action/ dual-interlock system may be used for the IT/ Security closet. Review need for this feature with CRPD.
- Provide appropriate suppression system at kitchen food preparation area.
- Sprinklers need to be in good condition at acceptance; test prior to inspection.
- Include automatic drain valves and locking Knox caps with FDC
- Include spare sprinklers and wrenches.
- Add heavy-duty guards at all at risk areas such as ballcourts or gameroom, or easily reached areas below 8'

21 13 16-000 | Dry-Pipe Sprinkler Systems

- Avoid Dry pipe sprinkler whenever possible; only where required by code shall protection be provided in any areas subject to freezing. Look at extended range heads rather than dry system.
- Make sure low points drain and that drain is located in a service area, adjacent or over a floor drain or basin. Coordinate drain point with CRPD project manager during design.
- If dry system is required, coordinate air compressor placement to allow for ease of service and repair/replacement. Provide sound control to minimize sound impact to adjacent programming.
- Provide flow test to CRPD project management to confirm satisfactory pressure for fire suppression system.

DIV 22 – Plumbing

General

- Pipe chases in new construction shall be a minimum of four feet (4') wide.
- Pressure Vessels for Potable Water Storage tanks shall be avoided except in cases of heavy water use such as true locker rooms.

22 10 00 | Plumbing Piping

22 11 00 | Facility Water Distribution

- Copper pipe only (No Substitutions).

- No compression, pro-press, or push-on (SharkBite) couplings or fittings.
- Brazing of fittings shall be required on diameters greater than XX.
- Potable water distribution design must be compliant with Legionella mitigation design practices to reduce potential for legionella's disease with our design. – i.e. – very short run out to lavatories from hot water return line – water temp maintenance or use instantaneous type water heater
- All sinks, drinking fountains, water closets, urinals, hot water tanks and outside hose bibs shall have individual shutoff valves. Water tank shutoffs shall be within eighteen inches (18") of tank. All other valves shall be within twelve inches (12") of fixture and coordinated with access panels or accessible via chase.
- Backflow Preventer installed as required by code.
- Outside Hydrant shall include vacuum breaker, frost free individual shutoff and shall be secured Confirm that distribution of hose bibs at the exterior perimeter meets CRPD needs and shall have a security feature to secure them when not in use and auto draining/ freeze protection features.
- Domestic hot water system should consider the use of hot water recirculation pumps for distribution to points of use.
- Pumps (including hot water recirculating) shall be by as outlined in the standard materials list.

22 13 00 | Facility Sanitary Sewers

- Lines shall be schedule 80 solid underground, schedule 40 above in addition to meeting all code requirements. Underground sanitary piping material to be reviewed with and approved by CRPD.
- Trap seals are preferred. If floor drains have trap primers, all components shall be in accessible locations, or use indirect drains where possible.
- Roof drains shall be cast iron or sched 40/w insulated wraps.
- At kitchens, provide the first 10' of drain line as cast iron for lipids and durability

22 14 00 | Facility Storm Drainage

- Plastic pipe is prohibited above grade, unless approved by Recreation and Parks, in writing. No exposed plastic pipe at exterior.
- All downspouts shall have cast iron pipe and cleanout plugs. Pipe shall be a minimum of eight feet (8') from end of downspout to ground.

22 34 00 | Fuel-Fired Domestic Water Heaters

- Larger buildings shall be gas fired with recirc and mixing valve. Smaller buildings may incorporate satellite hot water heaters located near the point of use.

22 42 00 | Commercial Plumbing Fixtures

- Provide low flow urinals with sensor flush valves.
- Provide automatic toilet flush valves with override, unless specified otherwise.
- Sinks should use touch-free electric sensor operated valves, unless specified otherwise.
- Mop basins should provide a hot and cold faucet (hose bib) for cleaning the chemical mixing system.

22 47 00 | Drinking Fountains and Water Coolers

- Water coolers shall be ADA compliant, perhaps as part of a dual hi-low design. An integrated unit providing both a drinking fountain and the ability to fill personal water bottles should be required
- Coordinate quantity, location and numbers of drinking fountains with CRPD project management team during early design.

DIV 23 – HVAC

General

- HVAC Design Targets –
 - Use IECC 2018; Conform with Climate and Energy Action Plan.
 - It is the specifying engineers responsibility to make every reasonable effort to ensure that equipment specified with integral controls is provided with native BACnet controls or a BACnet gateway fully mapped and configured for interface with the overall Building Automation System (BAS). This includes requiring BACnet Testing Laboratory tested devices as the basis of design whenever available.
 - Coordinate zoning and supplemental perimeter heat around windows with CRPD during early DD to determine specific project requirements
 - Selection of HVAC system shall be made with capacity to cool on a 100-degree day and the capacity to heat on a minus 10-degree day.
 - Adjustable communicating thermostats are preferred, adjustment range to be set by department energy manager. Electronic thermostat displays are to be determined on a site-by-site basis.
 - *Suggested standards per Sustainable Columbus: See Appendix A*
 - Relative Humidity should target max of 60% or as required for room material - ie wood floors. Provide RH control in the air-conditioned spaces. Where humidity control is specified equipment design shall accommodate sequences relative to humidity control i.e. reheat coils, humidity sensors as required, etc.
 - Each system shall have 20% spare capacity. Systems shall have high turn down capability to better load match spaces
 - DDC control system hardware shall provide intrinsically or through system controller expansion for 10% spare point capacity.
- Determine if a direct digital control (DDC) / Building Automation System (BAS) is required and will monitor every piece of major equipment and every individual temperature-controlled zone. See appendix D. Equipment requiring Building Automation System (BAS) control shall be specifically detailed in the specifications. The specification shall list equipment not controlled by

the BAS and shall delineate who is to supply controls and who is to install controls via a responsibility matrix.

- Avoid locating thermostats in areas where the public will have access to them. Where necessary thermostats in public areas shall be non-display and shall be protected with cages or rigid construction such as stainless-steel wall-plate thermostats.
- Air intakes should have cleanable inlet screens.
- Ductwork between rooms where confidential discussions must take place should use acoustical linings or sound traps. Coordinate with CRPD project management to evaluate where appropriate and pertinent.
- Air and piping distribution systems should be designed to minimize noise levels in any noise sensitive spaces. Design to comply with industry accepted noise criteria (NC) standards for each space.
- Consider energy recovery ventilation and demand controlled ventilation system controlled by the building automation system (BAS) through a CO² sensor. Energy recover systems shall be passive with minimal moving parts. If return air from toilet rooms is being pulled through the energy recovery system, ensure that odor issues do not become a problem. Review local building codes to determine criteria for ducting toilet exhaust in any ducts shared by HVAC/Ventilation equipment.
- CO₂ and humidity sensors desired in return air ductwork. For spaces with similar occupancy levels and occupancy times return air CO₂ may be utilized. For all other types CO₂ sensors must be installed in each zone and shall be integral to the space thermostat.
- Coordinate options for redundancy within systems.
- Motors shall be selected for spare capacity a minimum of 1 motor size larger than calculated
- Mechanical rooms above finished spaces shall be provided with 6" concrete curbs around perimeter and requirement to curb or seal around any floor penetrations.
- Hose bibs will be located within 10' of all condensers. If roof mounted, provide electric receptacles as well.
- Thermostats to have cast iron or aluminum covers where there is potential for damage due to activity in the space or the risk of vandalism.
- Expansion tanks will be above header and shall be compression type and valved with sight glass.
- All AHUs to be provided with cord-reel trouble light (work-light on 50-ft cord, retractable, 120 lumens,). Cord reel to be placed where accessible by 5'6" human.
- All drain valves shall be piped to a drain
- All equipment and main lines in boiler room will have drain valves
- Louvers over doors prohibited
- Actuators inside of duct work prohibited for unitary/zone controllers. For central plant equipment any actuators shall be accessed via handled doors in the equipment without requiring removal of equipment panels.
- Gravity relief for building pressurization is prohibited. Motor operated preferred.
- Equipment safeties to be hard wired to place controlled equipment in a failsafe condition as determined by the specification (fail open, fail closed, fail on, fail off etc.) In addition, if equipment is controlled via Building Automation System (BAS), shall include a separate set of contacts for input into the BAS system for annunciation to maintenance staff. This is to include fire-alarm shutdown of the equipment.

- All equipment shall have external electric disconnect
- Two-way control valves allowed for most coils, but ensure three-way control valves are placed in appropriate locations at the end of long runs/branches, in compliance with code requirements.
- Do not use zone valves unless required.
- All actuators are to be true modulating or 2-position. Floating control is prohibited. All position feedbacks (if specified) are to be true feedbacks representative of actual position. Calculated position is not acceptable.
- Exhaust fans to be belt drive
- Ball valves on reheat coils
- Hail guards required with outdoor mounted equipment.
- Door hardware to use classroom lock function, always exit, non-locking on the mechanical room side, keyed access on the exterior side.
- All equipment provided with easy access for maintenance including entering and leaving building
 - Size doors to accommodate largest piece of equipment in the room or area.
 - Fixed ladders required for access for routine maintenance (i.e. provide steps to mechanical rooms and roof access); vertical ladders to be avoided if possible.
 - Avoid equipment above ceilings
 - Evaluate permanent maintenance platforms around equipment if above ceilings
 - When possible avoid equipment on roofs; provide separate mechanical rooms
 - If large AHU on roof, provide adjoining mechanical space, provided by AHU manufacture, evaluate during DD.
- Gauges
 - Pressure gauges on both sides of air separator and pumps
 - Pressure and temperature gauges on boiler and chiller
 - Temperature gauges on boiler stack, supply and discharge of air handlers, pumps, and boilers
- Compressor:
 - 60 gallon minimum
 - Automatic drain valve (electric)
 - Dual-drive for redundancy
- Air Dryer
 - Include filters, both oil and water
 - Include pressure regulator
- Expansion Tanks
 - bladder type prohibited
 - must have sight gauge
 - Airtrol fitting on bottom of tank
- Condensers
 - Coordinate location with CRPD project management during DD.

- Copper coils
 - dual-line sets, evaporators, and compressors, or more
 - Refrigerant lines to be type L or ACR copper only.
- Chillers
 - Shall have dual-pumps with remote barrels and compressors and air-cooled condensers.
If system is controlled via Building Automation System (BAS) then pump control shall be via the BAS system. The equipment provider shall provide a set of contacts calling for the pumps to run and to stop.
 - Barrels and compressors should be located inside if concerns with security of the area.

23 05 23 | General Duty Valves

- Refer to standards material list.

23 11 23 | Natural Gas Piping

- none

23 21 13 | Hydronic Piping

- none

23 21 23 | Hydronic Pumps

- A minimum of two pumps, designed to alternate for the boiler & chiller.
- Dual pumps, each with full building capacity.
- Vertical pumps are prohibited. End Suction, base mount, Floor mounted only.

23 23 00 | Refrigerant Piping

- Piping shall be sized per the manufacturer's recommendations and identified on the construction documents with a riser diagram.
- Minimize the use of any joints in the refrigerant system.

23 25 00 | HVAC Water Treatment

- All hydronic systems shall have provisions to inhibit freezing in a power loss situation.
- There shall be access for water testing and treatment.

23 31 13 | Metal Ducts

- Refer to latest edition of SMACNA as a reference standard.
- All gages shall be SMACNA or greater.

23 33 00 | Air Duct Accessories

- All air duct accessories shall be manufactured products; field-built elements are discouraged.
- All construction shall be protected from the elements.

- All accessories shall be SMACNA or greater.

23 34 00 | HVAC Fans

- Air Handlers shall have return fans.
- Central Station Air Handler Fans shall have Soft Start / VFD's.

23 34 23 | HVAC Power Ventilator

- provide easy closing clips for access and ease of maintenance, no threaded bolts

23 36 00 | Air Terminal Units (VAV)

- none

23 41 00 | Particulate Air Filtration

- Stainless steel welded frames on all filters, with filter rack and one side mesh.
- CRPD implements bulk filter media, provide an area for housing the required media.

23 52 16 | Cast Sectional Boilers; Aluminum

- Boilers shall be wired by the controls company, other than 110v. Following are minimum controls to the BAS system: Start-Stop, Setpoints, Safety / Alarm security. Provide BACNET board for monitoring and alarm output.
- Boiler relief valves shall be piped to a drain, with a union connection not more than ten inches (10") from the exterior of the boiler.
- BOILERS AND ELECTRICAL WILL NOT BE LOCATED IN SAME ROOM.
- Boilers shall have a minimum of four feet (4') between boilers and 4' clearance space for service.
- Multi stage burner.
- Cast Sectional Boilers – Aluminum Style - Condensing
- All boiler specialties, gauges, cutoffs, etc. shall be in a boiler tree composed of threaded connections that do not drip over the boiler itself. No welded/prefab trees permitted.
- For new, larger buildings; Condensing boilers shall have the entire system designed to use the extra efficiency of the condensing boiler when boiler EWT is below 130 deg F (i.e. use hot water reset, size terminal equipment accordingly, use 2-way valves etc.)
- Components include heat exchangers with fire tube design that is self-supporting, baffle-free and warranted to withstand thermal shock, exhaust manifold shall include condensate drain

23 54 00 | Furnaces

- For Buildings under 4,000 s.f. floor area, and where appropriate, a furnace may be used if agreed upon by CRPD
- Furnaces shall be high efficiency condensing type with sealed combustion heat exchangers and 2 piped, gas vent and combustion air to the exterior per manufacturer requirements.
- When possible discharge furnace vents to a high-sidewall application greater than 10' above grade. Avoid roof penetration.

- Plastic style vent and combustion air piping and solvent shall be listed and labeled by the manufacturer for use with furnaces.

23 55 33 | Fuel-Fired Unit Heaters

- All boiler rooms shall be heated (gas fired).

23 73 13 | Modular Indoor Central Station AHU

- No opposed blade dampers on economizer (parallel blades mix air better, resulting is fewer freezestat problems). Provide pneumatic actuators for larger dampers at AHUs only
- Hinged doors on Air handlers w/ handles
- Belt drive only
- Air handlers must have a three-foot (3') clearance or check with owner.
- Backward incline fans in air handlers.
- DDC installed by manufacturer.

23 82 16 | Air Coils

- no double stacked or closely spaced coils, provide clearances and position to allow for cleaning and maintenance

23 82 19 | Fan Coil Units

- Extended cabinets on Unit ventilators and fan coils

23 82 23 | Unit Ventilators

- Extended cabinets on Unit ventilators and fan coils

23 82 39 | Unit Heaters

- none

DIV 25 – Integrated Automation

See Appendix D

DIV 26 – Electrical**General**

- All electrical installation shall meet or exceed city and current NEC requirements.
- Outlet and switch locations as required for program needs and in logical and easy to reach locations.
- Any exterior receptacles located in parks or other areas prone to vagrancy shall be installed in type 12/13 single-door lockable enclosures; In-use covers are not allowed.
- All design documents shall have a single line diagram of power equipment for use for an arc-flash study
- Outlet locations in kitchens shall be installed within 24" of countertop edge and no more than 48" apart as measured along countertop.
- Outlet locations shall be installed within 6' of door and at least every 12' as measured along the floor line in typical occupied rooms.
- Electrical service into the facility may use aluminum alloy or copper feeders from the transformer to switchgear to the panelboards. Copper feeds are to be used from the panelboards to all points of service.

26 05 19 | Low-Voltage Electrical Power Conductors Cables

- Plastic jackets shall be used on flexible conduit exposed to outdoor or wet locations.
- Wire shall be: THHN above ground; XHHW below ground or XHHW-2; Any other wire shall need to be approved by the Recreation & Parks Department in writing.
- Non-metallic sheathed cable is prohibited.
- Aluminum wire is prohibited.

26 05 29 | Hangers and Supports for Electrical Systems

- Use of wire ties to support conduit or MC is prohibited.
- Power actuated anchors or plug anchorage using wood, lead or plastic are prohibited.

26 05 33 | Raceway Boxes

- All lighting and junction boxes shall be accessible by normal means-step ladder, extension ladder and one main lift.
- Conduits shall be supported by Uni-strut. Conduits shall not be connected to drop ceilings.
- All conduit located inside concrete masonry shall be galvanized rigid metal only, no plastic.
- MC Cable shall be from junction box above ceiling to fixture not to exceed ten feet (10'). MC cable shall not be accepted fixture to fixture. All whips shall terminate in a junction box.
- Plastic jacketed rigid conduit shall be used going through concrete and shall be a minimum of six inches (6") above to six inches (6") below concrete.
- Anchoring of junction boxes, conduit and laying wires across drop ceilings is prohibited.
- Swimming pool pump houses shall use plastic jacketed rigid conduit or PVC conduit and boxes. Disconnects and panels shall be gasketed covers and stainless steel enclosures.
- Threaded couplings shall be used with rigid conduit.
- Wire molding shall not be accepted.
- BX cable shall not be permitted.

- Pull Boxes-If needed, must be accessible. Do not place pull boxes above fixed ceilings, HVAC ducts or piping.
- All conduits should have no more than 40% fill. Smaller conduits should be considered for use in furred spaces and other restricted areas.
- Pull boxes shall not be more than seventy-five feet (75') apart. No more than two 90 degree turns in a run.
- All wall hangers from floor to ceiling shall be strap type pipe hangers. (Surface mount only).
- Junction boxes shall be color coded: Computer-orange cover; Fire-red cover; Phones, alarm, sound system, and data link-blue cover
- All outside conduit shall be rigid metallic. All conduit underground shall be PVC schedule 80. All interior conduit shall be EMT as allowed by code.

26 5 53 | Identification for Electrical Systems

- Labeling is required on all junction boxes, face plates, fixture housing, panels and switch gear.
- Standard tagging and labeling systems compliant with ANSI standards are acceptable for use on all distribution lines and components.

26 05 74 | Arc Flash Program

- TBD

26 21 00 | Low-Voltage Electrical Service Entrance

- All service is to be underground, if available by the utility purveyor.
- Coordinate pullbox requirement with utility company/provider.
- Any conduit used underground, except elbows, shall be schedule 80 PVC.
- All pipe above ground shall be rigid metallic including the 90-degree elbow below ground.
- All elbows, in service only, shall be 90 degree sweeping elbows.
- No direct burial of wire.

26 22 00 | Low-Voltage Transformers

- Transformers shall be copper wound.

26 23 00 | Low-Voltage Switchgear

- Coordinate with CRPD to determine if electric services require three phase, 4 wire.
- All floor mounted switchgear shall be on a housekeeping pad and have a minimum of three feet (3') clearance 3 sides.
- All switch gear shall be fused type with extra spaces for future expansion. 200 amps min., spare 3 pole fused switches.
- All switch gear, disconnects and main services are to be located in one room.

26 24 00 | Switchboards and Panelboards

- All wiring shall be labeled at fixtures, in junction boxes and inside of electric panels. Room and panel numbers to coincide. A code list of labeling shall be in one three-ring binder and on thumb drive.
- All panels shall be surface mounted on a Uni-strut. Wood backing is prohibited.
- Use of class J and L fuses is prohibited.
- Spare fuse complement shall include a minimum of three spare fuses and control circuit fuses in switchboard and each power and control circuit.
- Separate lighting and power panels, circuits shall be balanced loads between phases.
- Fifteen (15) amp circuits are not permitted. Must be 20 amp or higher.
- All empty slots in a panel shall be filled with a breaker not less than 20 amps, unless approved otherwise by owner in writing.
- All breakers shall be bolt-in type.
- No single-phase panels when a 3-phase service is supplied.
- There shall be a receptacle within three feet (3') of any panel.
- Panels shall be a minimum of 200 amps.
- New panels shall not be mounted over existing panels. Old existing panels shall not be used as junction box. All wires are to be removed from old existing panels.
- No double-single breakers allowed.

26 27 00 | Low-Voltage Distribution Equipment

- All wire shall be hard wired to wall switches and receptacles. Quick connection shall not be accepted.
- Branch circuits: Voltage drop in branch circuits must be considered in design. Increase conductors a minimum of one size when branch circuit home runs exceed 75 feet (75').
- Vending machines shall have dedicated circuits per unit.
- Grounding path through feeder conduits must be kept at less than five ohms resistance. All the feeder conduit shall include a grounding conductor for equipment enclosure (transformer case, etc. shall not be used as a grounding path).
- All wall switches and receptacles shall be 20 amp rated.
- All splices in ground shall be in an in-ground approved splice box. Bare wire splicing is prohibited.
- All work boxes shall be 4 square or larger.
- Cover plates on receptacles and switches shall be non-metallic & unbreakable.
- All motors shall be on a dedicated circuit.
- There shall be a 110 plug within four feet (4') of all air handlers, compressors, furnaces and main control panels.
- Not more than six unassigned general use duplex convenience outlets shall be on any one 20 ampere branch circuit.

26 28 00 | Enclosed Switches Circuit Breakers

- All air handlers and electric hot water tanks shall have a disconnect.

- External disconnect on all equipment.
- All disconnects to electric motors must be close enough that person working on motor can reach it from motor.

26 29 00 | Low-Voltage Controllers

- All 3-phase motors shall be protected with phase loss protection.
- All VFD controllers shall have built in phase loss protection as well as manual bypass.

26 50 00 | Lighting - General

- Lighting systems shall be designed to provide appropriate lighting levels on a foot-candle basis to comply with all code requirements and any specific CRPD needs. No areas should be designed with inefficient over-lighting unless requested by CRP.
- “Signature” or feature light fixture(s) should be planned for the main entrance area and at display areas inside the building.
- Lighting is generally assumed to be direct/indirect LED, supplemented with fluorescent where justified due to cost (if requested by CRPD to meet budgetary constraints), such as in mechanical spaces or other non-occupied areas.
- In areas receiving natural light, lighting system is assumed to use a light harvesting system to auto-dim when natural light levels are adequate.
- The design team is to provide a list summarizing all lighting efficiency features before the completion of 50% construction documents
- Design team to provide photometric design results integrated with daylight orientation studies to optimize the lighting system design and to assist the commissioning agent.
- Daylighting is desirable in all public areas, creative studios and staff offices. Daylighting is not required in other areas but would be desirable if it does not interfere with the use of technology and avoids creating glare.
- Lamps to be LED type, typical.
- Design team should coordinate the placement of security cameras with expected lighting and contrast levels.
- Review light fixtures and site and security lighting with CRPD staff (including facility management) at the end of Design Development to avoid redesign.
- All site lighting shall have in-line fuses.
- Mechanical room and boiler room shall have emergency lighting with enough light to illuminate the entire room with sufficient light for troubleshooting activity.
- While proposed lighting levels at Mechanical/ Electrical rooms may meet code requirements, they may be inadequate for servicing and maintenance functions. Provide options for increasing lighting levels (such as plug-in work lights) when needed at specific servicing points.
- Controls:
 - All buildings shall have a night light circuit.
 - Switches for emergency lighting circuits shall not be accessible to the public.
 - Lighting Control Devices photo cells shall be a maximum of twelve feet (12') from ground.

- Lighting controls should use motion activated sensors in public areas. Consider dual mode sensors in restrooms and staff work areas. In meeting rooms, wall switches with dimmers are preferred unless code requires occupancy sensors in meeting rooms. If so, dual mode motion and sound sensors are preferred in meeting rooms.
- BAS will be used to program and control lighting operation in public areas. Provide lighting controller override switch (clearly labelled) by staff entrance to allow for emergency or cleaning staff to bypass system (to “on”) when necessary.
- Lighting control to be compatible with and integrated through the building automation system interface.
- Lighting control should not have any control of plug connected devices in the building.
- Consider daylighting harvesting controls where demonstrated payback would merit CRP consideration.
- Keep lighting control simple, consider programmable presets for different seasons or different activities, generally a simple solution is preferred over a complicated programming.

26 51 00 | Lighting-Interior

- Coordinate color rendering temperatures of new light fixtures with interior finish palette and the intended use of that particular area
- All exterior lighting shall be on contactors.
- Light switches shall be in center director’s office, unless otherwise directed by CRPD.
- All fixtures in stairwells shall be no more than eight feet (8’) above stair tread directly below a fixture.
- LED Troffers (lay-ins) shall be individual lay-ins. Lights shall not be used as wire-way.

26 52 00 | Lighting-Exit

- Emergency exit lights should be photoluminescent or LED type as approved by CRP. Specify and install per local codes.

26 52 00 | Lighting-Emergency

- All independent fixtures equipped with emergency battery ballast shall have test light and switch accessible and visible from room floor.

26 53 00 | Exit Signs

- All exit lights shall be LED.

26 55 29 | Underwater Lighting

- Pools, Ponds, Fountains shall have all lighting fixtures selected jointly with CRPD.

26 55 53 | Security Lighting

- All security lighting fixtures shall be selected jointly with CRPD.

26 56 00 | Exterior Lighting

- Illuminate site perimeters, walkways and drives while using LED low cut-off angle fixtures that minimize night-time glare (light pollution). Where pole lighting is required, provide LED type as approved by CRP.
- All at grade mounted site lighting fixtures should be specifically reviewed and approved with CRP for durability of the fixture and ease of re-lamping with a minimized number of lamp types.
- Bollard or underground lighting is prohibited unless approved by the Recreation & Parks Department in writing.
- Site and building perimeter lighting shall be sufficient to satisfy all egress code requirements and to provide a feeling of safety for occupants and security for the building to minimize the opportunity for vandalism.
- Tie site lighting and perimeter building lighting to a BAS or a timeclock to ensure programmable operations to address seasonal changes.
- Exterior lighting shall consider light pollution: reduce light pollution generated by exterior lighting fixtures and devices, minimize light pollution which has a detrimental effect on the environment and the enjoyment of the night sky, reduce and minimize lighting and lighting practices which cause unnecessary illumination of adjacent properties, correct problems of glare and light trespass, and reduce energy use.

26 56 13 | Lighting Poles Standards

- Parking and security lighting shall be a maximum of thirty feet (30') but not lower than twelve feet (12').
- Light pole bases within 20' of a paved surface, or an area that will be mowed shall project above all paved surfaces a minimum of 36"
- All pole lighting shall be fused at the bottom of the pole (in hand hole).

26 56 16 | Parking Lighting

- Parking Lighting shall illuminate a minimum of 1.5-foot candle and an average of 3-foot candle or greater over all paved surface from the building main discharge, through the parking lot and access drive to the through street.

26 56 19 | Roadway Lighting

- Roadway Lighting, for vehicle only approaches equal to public roads, street lighting shall be per the AHJ municipal (typically Columbus) lighting guidelines for residential streets.

26 56 23 | Area Lighting

- Area lighting is preferred to be building wall packs of a vandal resistant type. The lighting designer shall identify all areas to be illuminated – and identify minimum and average foot candle level - in the initial submission.

26 56 26 | Landscape Lighting

- Lights shall be heavy duty, vandal resistant and encased in concrete – sidewall mounted if possible.

26 56 68 | Exterior Athletic Lighting

- Exterior Athletic Lighting shall be selected in conjunction with Columbus Recreation and Parks Staff for illumination levels and fixture type and manufacturer.
- The lighting designer shall identify all areas to be illuminated – and identify minimum and average foot candle level - in the initial submission.

DIV 27 – Communications

GENERAL

- As early as possible in design, no later than 50%/DD, design professional shall coordinate with CRPD PM to determine current City Department of Technology (DOT) requirements for IP services and IT infrastructure. During plan review stages, DOT will be engaged for plan review of technology sheets to provide feedback on location of wireless access points, data jack locations, etc.
- The City PM will be responsible for initiating the intake process with DOT for any new facility IT needs. Current POC for intake is Joe Vonville, and once he processes the intake then a DOT project manager will be assigned to coordinate their internal processes.
 - *DOT POCs:*
 - *Dave George and Katina Woods - project managers*
 - *Terry Dolder - device configuration, Wireless APs*
 - *Grett Slater - client services (desktop computers, phones)*
- The Design Team will provide information needed for the Intake process including project scope description, narrative, site connections, and required equipment, in both list and drawing format as needed.
 - *Direct connection to city fiber is preferred. Typically, installation of fiber to the site will be managed by DOT and should be budgeted into the project by the PM. As an alternative, City Network IP access can be patched through via 3rd party internet providers (spectrum, AT&T, etc.)*
- Any Building Automation System connection to the city network needs to be coordinated early on. This information should be identified for the intake process.
- UPS's should be evaluated for use on critical network, video surveillance, and alarm equipment.
- WIFI access points are typically provided and installed by DOT. Exterior wireless access points for free public WIFI should be considered, and if implemented need to have a solution to control on/off hours for them.
- Building plans should show the location of Coaxial Cable for Cable television services. Coax wiring should terminate in the central IT closet area. Cable TV Service does NOT

involve DOT, but runs through Tony Brodie within CRPD. The cable provider should be engaged during site planning to determine the location of pole drops.

- Involve DOT in the selection of AV equipment, sound systems, conference rooms, etc. as they may be able to provide assistance, or at least recommendations.
- The base building design and construction scope will include pathways (conduit, cable tray, floor duct bank, floor boxes), junction boxes, electrical wiring and completed power receptacles (where required) for all low voltage building systems (Technology/AV, Security, public address).
- The base building design and construction scope will include all cabling and all wall/ floor/ ceiling connection plates for Technology (including VOIP) and public address.
- Any conventional data cabling (CAT-6) connected to cameras, security system components and AV equipment will be included in base building scope and will be tagged, terminated, tested as part of the building construction contracts.

- **27 10 00-000 | Structured Cabling**

- From purveyor to all data outlets, provide a raceway system in compliance with NEC sizing criteria.
- Involve CRPD and DOT in the selection of CAT 5/5e/6 cable types.
- Completed structured cabling installation must comply with the 2008 NEC, BICS TDDM and relevant EIA/TIA standards. At project completion, contractor shall furnish one formal drawing showing all port locations to CRP.
- Contractor shall provide full test report for each cable run. Test report must show date, operator/company I.D. and cable manufacturer.
- Vendor shall furnish and install Cat. 6 Patch cords (one 4-ft. as needed for each cable run provided.)

- **27 20 00 | Data Communications**

- Design professionals shall make it abundantly clear on the contract documents a responsibility list identifying which entity is responsible for all elements of the data communication system.
- Procurement of network hardware, racks, patch panels, horizontal and vertical cable management, etc. is the responsibility of the project but **must use DOT standards**. As these standards change frequently, the project should clearly specify which components are included with the based bid and which are to be purchased via allowance post-NTP.
 - *Purchase of DOT-specified Cisco equipment must be done by Cisco certified VAR (Value Added Reseller).*
- Desktop computers - Designer to identify number, types, and locations, which will then be purchased by CRPD directly with existing UTC contracts.
 - *Note to CRPD PM: Ensure that new power strips and other peripherals are purchased at the same time.*
- Identify locations for printers and fax machines and provide network connectivity.

- Identify on preliminary submissions where all data outlets are to be located and coordinate with Columbus Recreation and Parks Department Staff.
- Provide secure closets suitable for data racks and switches within the building.
- **27 30 00 | Telephone Sets & Communications**
 - Design professionals shall make it abundantly clear on the contract documents a responsibility list identifying which entity is responsible for all elements of the telephone communication system.
 - The Switch and Telecommunications room shall be equipped to contain telecommunications equipment, cable terminations, and associated cross-connects.
 - The Horizontal Cross-connect shall consist of rack or wall mounted wiring blocks or panels for termination of copper cables or rack or wall mount interconnect centers or fiber management panels/trays for the termination of optical fibers.
 - Separation from sources of EMI shall be in accordance with ANSI/TIA/EIA-569-B and local codes.
 - Communication grounding / earthing and bonding shall be in accordance with applicable codes and regulations.
 - The Telecommunications room shall be dedicated to data and telecommunications functions. CRP to determine if a separate security closet is required or can be combined with the Telecom room.
 - Access to the Telecommunications room shall be restricted to authorized service personnel and shall not be shared with other building services that may interfere with the telecommunications systems. Telecom room not to be used for building maintenance services.
 - Assume use of VOIP for the phone system.
 - Phone Types:
 - IP: Preferred if facility has access to city network. Identify any existing lines that must be ported over and if new phones will need to be purchased. Porting an old number from AT&T takes 45 days.
 - POTS (plain old telephone service): not preferred. Use cellular if available for life safety monitoring and other remote services, this would NOT be the responsibility of DOT but of the CRPD service provider. May still be needed for fax lines.
 - Plans shall designate the required number of telephone lines for the facility and their intended usage. Consideration for phone lines/type/location shall be given to:
 - Desk phones (if Cisco IP phones note as such and provide data outlet)
 - Emergency phones (pools)
 - Fire alarm primary and backup monitoring (if not cellular)
 - Security Alarm monitoring (if not cellular)
 - Elevators

- Design profession shall provide a dedicated Telephone service entrance location in proximity to the other IT services.
- Raceway shall be provided for all telephone outlets to a central telephone backboard location.
- Provide a telephony diagram with the first submission to Columbus Recreation and Parks Department design review phases.
- **27 40 00 Audio-Video Equipment**
 - Design professional should schedule a meeting to discuss building AV requirements with the CRPD team; Consideration should be given to conference rooms, classrooms, lobby displays, building information kiosks, theaters, auditoriums, and portable systems (karaoke, podiums, etc.)
 - Facilities with paging or Public Address Systems need to consider Local & Global announcement requirements and zoning to facilitate building operations.
 - Public Address Systems incorporated into fire alarm systems are encouraged.
 - Design professional shall investigate and make recommendations for extended warranties and maintenance contracts for AV components, which can be included as bid alternates.
 - Special cabling for AV equipment shall be provided and installed separately as part of the AV equipment installation, however, junction boxes and conduit shall be included in the construction bid scope.
 - Certain areas of the interior may require the use of several options for delivering floor mounted power. These options may include a combination of fixed floor boxes, floor duct systems similar to Walker or Hubbell and low clearance type raised access floor system with modular flexible power connections to zone distribution boxes. A number of interior areas require flexibility for changing uses, including but not limited to the studio activity areas and the data/telecom closet. CRPD to approve recommended power distribution methods for each area of the building.
 - In addition to the technology/ AV equipment, any specialized cabling (non-CAT 6) required by the Technology/ AV system will be provided and installed under the Technology/ AV system contract.
 - Technology/ AV equipment may include (but is not limited to) projectors/ flat panel displays, assistive listening equipment, microphones and other such items in the meeting rooms. The Technology/ AV system may also include a separate speaker system in the meeting rooms if necessary to allow proper operation of the building public address/ paging system.

DIV 28 – Electronic Safety and Security

General

- Div. 28 systems rely upon a broad group of agencies and individuals who have specific roles and responsibilities; as such, this work should be closely managed between the Design Professional and CRPD project manager. Stakeholders include City Department

of Technology, Operations & Maintenance Staff who hold monitoring and service contracts, service contractors, and city UTC vendors.

- Div. 28 control stations are to be located in a dedicated section of the building (IT Closet) with a minimum 40"x40" floor area per system, per 12,500 SF of building unless otherwise specified. These dedicated areas should have plywood backer boards from 24"-96" above finish floor height. Area should have dedicated lockset for maintenance staff and be provided with adequate lighting and ventilation for operation and maintenance tasks. Electric quad-receptacles on a dedicated circuit fed from a panel with no motor loads should be provided. IT closet shall be located within the facility to minimize interference with the reception of cellular antennas.
- Security equipment will be approved by CRPD.
- In addition to the security equipment, any specialized security equipment cabling (non-CAT-6) will be provided and installed under the security system contract using the pathways and power rough-ins provided in the building design.
- Security equipment may include (but is not limited to) security cameras, network video recorders, glass break detectors, motion detectors, security system keypads, proximity card readers and duress alarms. Lock-down door hardware, door positions switches, etc. related to door operations may be included in the base building hardware scope but should be installed by the security contractor.
- Warranty and attic stock requirements for each Div. 28 system shall be discussed with the CRPD PM.
- Coordination with particular Div. 28 system vendors in existing contract relations with CRPD shall be included in the specifications, and a walkthrough demonstration of all systems to verify correct programming and operation prior to acceptance by CRPD shall be required.
- Remote devices in gymnasiums or other areas subject to damage from activities shall be provided with protective wire cages which closely match the dimensions of the unit and do not impact unit operation.
- Panels shall not be installed with tops more than 72 inches above finished floor.
- Instructions or O&M manuals for Division 28 items shall be bound and delivered to CRPD staff separately from general O&M manuals.
- All system components, wiring, cabling, and terminals shall be labelled with permanently adhered printed labels.
- Emergency Responder Radio Signal repeater system - A policy on the procurement and installation of these systems has not yet been developed by CRPD. Design professional shall engage with Project Manager to determine strategy for incorporation of this system into the building design on an individual project basis.
- No proprietary systems allowed.

28 10 00 | Access Control

- Design professional shall schedule a meeting to discuss building access control requirements with the CRPD team; Designer shall, at minimum, determine specific

- access control requirements for the project and request attic stock and training requirements from CRPD.
- Design professionals shall make it abundantly clear on the contract documents a responsibility list identifying which entity is responsible for all elements of the Access Control system starting with the first submission.
- Interim submittals will be used to verify owner requirements and align expectations between CPRD stakeholders. Submittals shall include at minimum:
 - 30%: device locations; preliminary riser diagram; expansion/integration with existing system;
 - 60%: same; preliminary specifications
 - 100%: complete written specification including testing, closeout, warranty and spare parts; complete illustration on plans; naming and labeling conventions; complete riser diagram and details as needed;
- The City currently uses a Matrix Central Station card reader system that is managed by central security for access via city ID badge. These can be installed by KNS, who should provide pricing based on UTC. Design professional shall discuss specific access control procurement strategy with each unique project.
- Fresh air intakes to any building spaces should not be accessible from the ground floor. Locate perimeter air intakes at least 20' above grade or as high as practical. If air intakes are placed on the roof, secure all roof access points.
- Elevator and stair door controls should be designed to allow controlled access to upper floors after normal facility hours. Non-public elevators should use access control proximity card readers and should provide security staff with the ability to remotely control elevator cab operations.

28 20 00 | Video Surveillance

- Design professional shall schedule a meeting to discuss building video surveillance requirements no later than the start of 60%/DD.
- CRPD preferred system is a Video Surveillance System composed of a Network Digital Video Recorder (NDVR), color digital IP cameras dome mounts and adapters and controllers. NDVRs store digital images directly from the IP network (encoded from the cameras). Local video recorders will be used and local images downloaded to NDVR's during non-public hours. Acceptable basis of design equipment manufacturers include; Exacq, Interlogix truVision, Lenel or others as approved by CRPD Security.
- Acceptable Video Management Software (VMS) vendors may include ExacqVision, Interlogix truVision Navigator 5, Lenel OnGuard Video or others as approved by CRP.
- Interior cameras should be placed away from hanging/ suspended exit or "flag signs" to prevent camera view from being blocked.
- Viewing areas must typically include parking lots and building entrances.
- Locate security cameras and power feeds out of the reach of the public or otherwise protect the installation behind secure optical glazing inside a wall recess if adequate sight lines could not be provided by raising the cameras.
- Evaluate placing components of the security system onto UPS circuits.
- Where digital cameras are required, coordinate with the lighting and contrast levels expected in the completed project. System may include digital motion detection.

Motion detection may be required with image captures going directly to local digital frame storage devices. Review with CRPD staff for potential inclusion as a bid add alternate.

- Provide for the installation of glass break detection systems in the building.
- Design professionals shall make it abundantly clear on the contract documents a responsibility list identifying which entity is responsible for all elements of the Video Surveillance system starting with the first submission.
- Video surveillance systems connect directly to the facility switch and will typically be installed by KNS, who should provide pricing based on UTC. The Genetec platform is utilized by the City and all required licenses must be included along with hardware.
- City vendors may assist with the system design, which should appropriately select cameras and locations for their specific application. Consideration should be given to network storage space to ensure 30 days or recorded footage can be maintained.
- Camera hardware must follow current camera specifications
 - PTZ cameras are not preferred unless specified as most CRPD systems are not actively monitored by staff.
 - multi-lens cameras are encouraged as they require only a single network drop and license.
- Camera locations must be coordinated with landscape architect to account for future growth of trees and shrubs.
- Exterior pole-mounted cameras should have a dedicated electric circuit to avoid conflict with lighting circuit or power receptacle schedules where 120V power is needed.
- Minimize exterior places of concealment around building perimeter and at building entrances and provide appropriate lighting for those who might be arriving early and leaving late.
- A minimum 35" dedicated high-definition monitor and workstation is recommended for viewing from the facility office.
- Interim submittals will be used to verify owner requirements and align expectations between CPRD stakeholders. Submittals shall include at minimum:
 - 30%: device locations; If existing system, show all components, list service contracts, and show expansion/integration plan
 - 60%: same; preliminary specifications; correspondence with service/installation contractors
 - 100%: complete written specification including testing, closeout, warranty and spare parts; complete illustration on plans; table of all hardware complete with naming and labeling conventions; complete riser diagram and details as needed;
- For components not accessible from floor area, ensure adequate space for ladder to access for routine maintenance or replacement.

28 31 00 | Intrusion Detection

- Design professional should schedule a meeting to discuss building intrusion detection requirements.

- Design professionals shall make it abundantly clear on the contract documents a responsibility list identifying which entity is responsible for all elements of the Intrusion Detection system starting with the first submission.
- Cellular connection for monitoring is preferred over land-line dial tone connection.
- Motion-detectors should be located throughout the facility to alarm any entry through exterior doors. Door contracts should be provided where otherwise needed.
- Arm/disarm keypads should be located to facilitate facility operation. Consideration must be given to facility program requirements, hours of the day utilized, split usage of the building by multiple groups, or other scenarios which demand particular zoning and keypad accessibility.
- Intrusion detection hardware must follow current specifications
- Interim submittals will be used to verify owner requirements and align expectations between CPRD stakeholders. Submittals shall include at minimum:
 - 30%: device locations; If existing system, show all components, list service contracts, and show expansion/integration plan
 - 60%: same; preliminary specifications; correspondence with service/installation contractors
 - 100%: complete written specification including testing, closeout, warranty and spare parts; complete illustration on plans; table of all hardware complete with naming and labeling conventions; complete riser diagram and details as needed;
- *Note: current burglar alarm monitoring is provided by Elite Fire Systems. In a typical scenario, the hardware should be specified, supplied, and installed by the contractor, but system programming will be completed by Elite.*

28 46 00 | Fire Detection and Alarm

- Design professional should schedule a meeting to discuss building fire detection and alarm requirements.
- CPRD preferred system will have voice evacuation system messaging, graphic display, and open communications protocol. Preferred system is Notifier, but other acceptable manufacturers include Edwards/EST and Siemens/Pyrotronix. System should include compatible battery backup, horn strobes, heat detectors, dual mode smoke detectors, exterior siren horns, zone expansion modules, horn strobes, tamper switches, fire alarm point annunciator and pull stations. Provide tamperproof pull station covers in all public areas.
- System shall allow future expansion to coordinate with potential future horizontal additions.
- For duct system elements of detection that are not floor mounted identify floor area required for lifts etc. to access the duct system for routine maintenance and service as well as potential removal and replacement.
- Do not mount components over spaces with uneven flooring or which cannot be accessed with ladder or man-lift for maintenance.

- Annual Test and Inspection: One year after date of Substantial Completion, test fire-alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections.
- Interim submittals will be used to verify owner requirements and align expectations between CPRD stakeholders. Submittals shall include at minimum:
 - 30%: general location of the equipment (minimum control panel and remote annunciator); If existing system, show all components, list service contracts, and show expansion/integration plan; indicate communication plan
 - 60%: same; preliminary specifications; correspondence with service/installation contractors
 - 100%: complete written specification including testing, closeout, warranty and spare parts; Illustrate on dedicated fire alarm or combined fire alarm special systems plans a complete illustration of all devices, naming and labeling convention, panels, complete riser showing all new and if applicable existing equipment, service entrances, cellular antennas, main backbone routing, devices and device service locations.
- Design professional shall include in the specification language similar to the following, but modified by the design professional to be suitable to the project.
 - *Operation and Maintenance Data: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:*
 - *Record copy of site-specific software.*
 - *Provide "Maintenance, Inspection and Testing Records" according to NFPA 72 article of the same name and include the following:*
 - *Frequency of testing of installed components.*
 - *Frequency of inspection of installed components.*
 - *Requirements and recommendations related to results of maintenance.*
 - *Manufacturer's user training manuals.*
 - *Manufacturer's required maintenance related to system warranty requirements.*
 - *Abbreviated operating instructions for mounting at fire-alarm control unit.*
 - *Copy of NFPA 25.*
 - **EXTRA MATERIALS**
 - *Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents. Deliver extra material in heavy duty tote with Permanent Markings in minimum 4" high lettering of contrasting colors to background indicating; Project Name & Address, in 1" high lettering the following - Date of construction Completion, Contractor Name, CSI*

Division and Name, material list of items included indicating make and model number, copies of all installation and maintenance manuals as well as 50% extra tote volume.

- *Lamps for Remote Indicating Lamp Units: Quantity equal to 20 percent of amount installed, but no fewer than 5 units.*
- *Lamps for Strobe Units: Quantity equal to 20 percent of amount installed, but no fewer than 5 units.*
- *Smoke Detectors, Fire Detectors, and Flame Detectors: Quantity equal to 20 percent of amount of each type installed, but no fewer than 10 units of each type.*
- *Detector Bases: Quantity equal to 10 percent of amount of each type installed, but no fewer than 5 units of each type.*
- *Keys and Tools: Two extra sets for access to locked and tamper proofed components.*
- *Audible and Visual Notification Appliances: Quantity equal to 20 percent of amount of each type installed, but no fewer than 10 units of each type.*
- *Fuses: five of each type installed in the system.*

28 47 00 | Mass Notification

- See Div. 27 for Public Address System requirements

DIV 31 – Earthwork

- Project limits should be clearly shown on the site plan, and contractor should be clearly designated as responsible for all lawn maintenance activities within project limits.
- Use consistent site materials and landscaping approaches based on CRPD design preferences.

DIV 32 – Exterior Improvements

- Site design should consider traffic flow, parking, and pedestrian areas.
- No grass shall be installed against building edge - include mow strips and design grass areas to be mowed by a minimum 6' wide mower deck.
- No grass in parking islands.
- Sports fields shall specify Green Velvet Sports Mix seed.
- Site furnishings shall specify CRPD standard park amenities / equipment.
- Expansion joints to be used when new concrete pavement abuts existing.
- Ponds shall be provided with an Airmax LS60 airmax aeration system

- Irrigation Systems:
 - In general, irrigation systems are discouraged due to the inspection and maintenance burden. Designers should strive to install landscaping that does not require frequent sprinkling.
 - Prefer Rainbird Controller with 4G module that's compatible with the IQ system. Should include a one-year subscription.
 - Master valve and flow sensor to be included.
 - All pop-up heads to be pressure regulated.
 - Rotary heads to be stainless steel, not plastic.
 - Any irrigation lines under hard surface or rubber safety surface must be in a sleeve.
 - Add quick couplers throughout the system for additional water sources, and connection points on mainlines before valves. This allows easy winterization of system using pressurized air.
 - Water pressure should be sufficient so no additional pressurization pump is needed.
 - All irrigation amenities should be installed and remain matching existing grade.
 - Valve boxes and quick couplers should be installed per our specification
 - Rainbird 5RC - 1 in. Quick Coupling Valve with 55K1 - QCV Key for 5 Model Quick Coupling Valves that has a SH1 - SH Series Hose Swivel - 1 in. Female Pipe x 3/4 in. Male Hose Thread attached to it
 - With every two quick coupler valves a quick connect key should be included. So four valves = 2 keys.
- Mulch should not be specified where it will wash into ponds or drainage structures
- Brick pavement should not be used unless authorized.
- No recycling receptacles in parks, as it is not funded at this time.
- Trash receptacles should be adequate to service the expected traffic volume and activities of exterior park areas.
- Pathways should be minimum 10' wide and have gradual radii sufficient to allow maintenance vehicles to stay on the path.
- Curb, parking blocks, bollards, or timber rail should be provided to prevent vehicle access into park areas.

DIV 33 – Utilities

- This section includes design requirements for the following utility services:
 - Electric Power, whether from Columbus DOP or AEP
 - Natural Gas: Columbia Gas
 - Water & Sewer Service: Columbus Division of Water
 - Land-line telephone services
 - Cable television service
 - Internet / IP services
 - Waste Management

- For details on utility account creation and administration, consultant is to refer to the CRPD Utilities SOP, available upon request from the CRPD Project Manager
 - Designer is responsible for furnishing building information as necessary for facility input into Portfolio Manager (by Energy Star) and Jade Track
- Bid tab shall include allowances for each utility if connection fees, aid-to-construction, or other expenses that are expected.
 - If facility will be connected to City fiber network, need to coordinate with DOT to include sufficient allowance for this install as part of the project.
- Electric Power:
 - Per provider requirements.
- Natural Gas:
 - Per provider requirements.
- Water/Sewer Service:
 - WSP and CC plans provided per DPU / site plan requirements
- Telephone and Internet/IP Services
 - Plans shall clearly indicate data utility line routing, overhead and aerial, and indicate whether existing or proposed utility poles are intended for connection to R/W data feeds.

DIV 34 – Transportation

- Design consultant shall coordinate to determine need for traffic study with DPS plan review department.
- Design consultant shall consider availability of COTA bus lines in the surrounding area, if necessary assist with CRPD coordination to install new stops, turnarounds, etc.
- In accordance with the “City of Columbus ADA Rules and Regulations (Dated April 1, 2018),” identify all locations requiring ADA curb ramp upgrades throughout the project, and provide survey and detailed ramp design.
- Site design should take participant safety into consideration for site vehicular traffic patterns. If building footprint is immediately adjacent to vehicular traffic, consider knee walls or site features (bollards, planters, landscaping, etc.) to mitigate the potential for vehicular damage to the facility.
- Coordinate areas provided for drop-off, loading, and delivery of supplies, furniture, and equipment. Site delivery areas will not be required to accommodate semi-trucks, but should allow straight body 26’ box trucks, step vans, ambulance/ medic units, trash pick-up, etc.
- Ensure that proper design maneuvering clearances have been provided for the types of vehicles typically expected by staff and visitors to each facility. In designing the site layouts for deliveries, CRPD requires planning for a 26’ long truck.
- Ensure that the expected sizes and types of delivery and service trucks can be accommodated in the areas provided. Plan locations of construction features such as bollards to avoid vehicular

damage. Examples of construction that might be vulnerable to truck damage include surface mounted electrical distribution, transformers, generators, trash enclosures, meters, etc.

- Parking lot signposts to be aluminum tubing mounted to avoid damage to signage from parking operations.

APPENDIX A - Green Design & Energy Efficiency Standards

See “CRPD Green Design Guidelines” document to assist with determination of sustainability goals during design.

HVAC Setpoints:

Recent retro commissioning projects by the city recommended **68 heating/74 cooling with +/- 3 degree** bandwidth. Thermostats are able to be overridden by occupants of the space. Therefore, with the +/- range, the available settings are 65 - 71 heating & 71 - 77 cooling.

Any overrides re-set at the next change in occupancy.

Standard occupied range is 7 AM - 5 PM.

Due to the variety of facilities in the CRPD asset inventory, setpoints and setback schedule should be determined on a site-by-site basis.

- Rental facilities should allow for lower cooling to pre-condition a space for large events
- Aquatics facilities will generally require higher temperatures for occupant comfort

Unoccupied setback temps are suggested as follows:

- *Cooling: 80-degree night setback*
- *Heating: 60-degree night setback*

APPENDIX B - Artwork

The City encourages the inclusion of artwork in any facility exceeding 25,000 SF.

The Columbus Art Commission has statutory authority over the design and placement of all art to be located on city property. 2% of project cost budgeted to art installation is a recommended goal.

Examples:

APPENDIX C - FFE

This appendix provides guidance on the provision of Furniture, Fixtures, and Equipment (FFE) as part of large renovation or new construction capital improvement projects, to include selection, procurement, receipt, storage, unpacking, assembly, installation, and/or placement.

FFE is generally distinct from building construction in that these items are not permanently affixed to the structure. This is particularly important to denote clearly when a project is subject to Prevailing Wage (PW) requirements, as the labor associated with non-permanent items is exempt from PW rates.

FFE can include, but is not limited to:

- office, lobby, classroom, and other furniture*
- game room amenities
- fitness equipment
- televisions** and other mobile AV/PA systems
- Interior decorations such as flags and artwork
- art equipment and supplies
- cleaning equipment and supplies
- movable shelving and storage bins, filing cabinets, safes
- musical equipment
- floor rugs and mats
- waste and recycling containers

The A/E is expected to provide oversight to assure that specified products are selected, procured, and placed in accordance with their design intent. A/E shall coordinate FFE locations to ensure that power and data feeds align to FFE solutions.

Note: Ideally, the design budget will allocate sufficient funding as necessary for the selection and design of custom room furnishings. This non-trivial activity should be considered during the A/E scope of service development and negotiation phases.

FFE Guidance:

- Early in the design process, the Architect should schedule a meeting with CRPD to review FFE requirements, budget, and responsibilities.
- In general, CRPD will take responsibility for items which can be purchased under existing Universal Term Contracts (UTC) and which are part of warehouse stock. These items are currently limited to:
 - folding tables and chairs
 - office equipment and supplies
 - bathroom soap dispensers
 - Other miscellaneous supplies stocked by warehouse (art, sports)
- All other FFE items should be Contractor-provided and installed.

- To the greatest extent possible, contractor-provided FFE should be selected from the CRPD list of standardized items, which promotes consistency and efficiency across its supply, maintenance, and warehousing functions. This list is available upon request and includes:
 - Game room equipment
 - Fitness equipment
 - Kitchen equipment
 - Gymnastics equipment
 - Cleaning equipment
 - Art equipment
 - Televisions
 - Mobile PA systems
 - Office furniture (make/model/finish), lobby, classroom, and other furniture
 - Movable shelving and storage bins, filing cabinets, safes
 - Clocks
- The FFE budget will be developed in collaboration with the project team, and FFE items will be primarily selected by the facility staff with approval of an appropriate CRPD administrator or assistant director.
- Ideally, FFE items should be selected prior to bid and included in base bid or alternate pricing. A less-preferred method is to bid the project with an FFE allowance, from which FFE items will later be purchased with a CRPD-provided list. If a FFE allowance is utilized, particular care should be paid to who is responsible for the labor to receive, store, unpack, assemble, and install FFE items, and this should be articulated during the pre-bid meeting to assist contractors in the development of accurate bid estimates.

**note: casework, including permanently installed reception desks, cabinetry, trophy cases, etc is NOT part of FFE.

**note: Installation of wall-mounted televisions is not considered part of permanent construction and is not subject to PW rates, as confirmed by City of Columbus PW coordinator.

APPENDIX D - Building Automation Systems (BAS) and Multi-Site Integration

CRPD operates a Utility Monitoring and Control System (UMCS), also known as the HVAC “front end”, which enables remote access to all integrated facilities via the internet to defined users on the City of Columbus Ethernet network through a web-based portal. The UMCS operates on the Tridium Niagara 4 platform and runs on a city-owned server administered by the city Department of Technology. This system is based on the BACnet standard, and as such, all building-level HVAC controls must comply to strict requirements to enable integration into this city-wide system.

City requirements:

Provide BACnet based front end operating system, with web access graphical user interface with at least 3 different levels of user permissions

- All permissions including sequence of operations

- Operating setpoint access

- View only access

Provide City network access via wired IP connection, or cellular modem with secure connection

HVAC / Controls Subcontractor requirements:

Response time onsite within 24 hours to emergency call, tech desk call support 24/7 availability

Control Subcontractor to provide setpoint adjustments during warranty period.

~~Provide own cellular network for static IP and standardized router~~

Provide monitoring and minimum 1-year trend data for systems including:

- On/off schedule - occupied schedule/setback

- Supply Air cfm, temp, % operation of VFD

- OA cfm, temp, RH%

- RA cfm, temp

- MA temp

- Space temp, RH%, cfm

- CHW Entering and Leaving temp, valve position

- HW Entering and Leaving temp, valve positions (heat and reheat)

APPENDIX E - Plan Standards and Digital Submission Requirements

CADD standards for architectural plans - default to US National Cad Standard until department-specific guidance is published. Design team to implement their own BIM standards and shall have a deliverable to CRPD that can be reviewed/navigated with shareware or a non proprietary software solution such as Navisworks, Dalux Bim Viewer or any third party shareware that allows review of BIM files in a .RVT, .IFC, or .NWD/.NWF file formats as well as the original digital and .PDFS

Digital submission requirements for plan review - Vector PDF with hyperlinks required in addition to hard copies.

BIM / 3D modeling - use of BIM 360, Navisworks or any owner-approved alternative required for live 3D plan review meetings. Design efforts should be front-loaded during SD/DD phases to maximize positive impacts to project with reduced cost of late design changes (McLeamy Curve)

APPENDIX F - Signage

See “CRPD Signage Manual”.

See “Standard Project Sign” standard drawing.

Main Park and Facility Signs:

Note that CRPD procures HDPE plastic in bulk and manufactures its own main park and facility entry signs. This should be coordinated with the Park Maintenance Section, and provisions included in the project plans/specifications for installation by the contractor, where necessary.

CRPD Park Maintenance Section also maintains a stock of park rules signage. Early coordination for the sourcing of this signage should take place on a project, as warehouse stock levels vary.

APPENDIX G - Standard Materials/Vendors

See “Standard Materials List” - separate document

APPENDIX H - Standard Drawings

List of Standard Drawings

23 34 16 Fans

23 41 00 Particulate Air Filtration

23 52 00 Heating Boilers

26 29 00 Low Voltage Controllers

26 51 00 Trouble Light

26 56 13 Poles & Standards - Light Pole Base Detail

28 23 00 Video Surveillance Closet

Pending:

Server Rack Layout

Kitchen Layout

Casework Details

APPENDIX I - Space Program of Requirements

Purpose

This appendix is intended to establish the design requirements for CRPD facilities and the individual room types within CRPD facilities as a function of facility type and usage. Categories to be considered include:

- Ceiling finish
- Floor finish
- Wall finish
- Base treatment
- Lighting fixture types
- HVAC systems
- Equipment

Method

~~The table on the following page shall be used as a starting basis for selection of the individual room parameters described above.~~ Final design of all facilities is subject in the best judgement of the design professional and the input of CRPD stakeholders via the design review process.

Special Notes for Rental Facilities

- 1 –Hand dryers only in restrooms, no paper towel dispensers
- 2 – TP dispensers –Residential style, non-lockable. Similar to the Bradley BRD5234 - Standard spring loaded.
- 3 – Soap dispensers – Impact ClearVu Bulk Lotion Soap Dispenser, keyless.
- 4 – Restroom dividers – Hiny Hiders by Scranton Products, with continuous hinge.
- 5 – Exterior doors – Special-Lite aluminum doors with increased window area but not continuous glass.
- 6 – Pendant Lights – LED fixtures, dimmable for all facilities, HayBay by RAB preferred.

APPENDIX J - Athletic Fields and Courts Design Standards

See attached PDF for guidance on Athletic Fields and Courts.

Tennis Court Lights Needs from the Maintenance Perspective:

In general, when the light poles are on the inside of the court enclosure, usually down the middle between multiple courts:

- We will need the base to be asphalt (not clay) so that a van-lift truck can access the site.
- We will need the light poles to be about 20' vertical, but less than 25' in order for the van-lift unit to allow us to service the light (the total extension of the bucket is 25').
- We will want strong light guards over all of the bulbs, preferably bullet resistant, but certainly substantial to protect park visitors from falling glass sharps if the lights are damaged from either tennis balls or rocks, etc.
- When poles are inside of the tennis compound, we need a minimum gate size (or vehicular access) of 15' in width, but larger would help as we have larger lift vehicles that won't fit comfortably in 15'.
- We need each court to have individual controls, and have a time clock (so that we can ensure lights go off by 11:00 pm, park closing time), a push button for the user, and a contactor. Simpler is better for tennis controls.
- We request that a contractor will be experienced installing and removing tennis court lights to better address player issues like glare, adequate distance away from play, etc.

If tennis court lights are to be installed outside of the tennis courts, then we will need an adequate hard surface access to all such lights with enough room for fairly large vehicles to turn and maneuver.