Data & Voice Cabling Guidelines

Columbus Zoo and Aquarium | Revised 12/08/2023

Introduction

This document is a guide. Due to the variety of buildings and projects across The Columbus Zoo and Aquarium, a variety of existing standards and practices are in use. For minor additions and changes to structured cabling, existing local standards/practices should be used. For new construction and major renovation, use the standards in this document.

Abbreviations used in this document

- Cat6 (or Cat6a): Category 6 or 6a UTP
- IDF: Intermediate Distribution Frame; also Distribution Equipment Room (DER)
- MDF: Main Distribution Frame; also Main Equipment Room (MER)
- TR: Technology Room (TR); also Technology Closet (TC)
- UTP: Unshielded twisted pair
- WAO: Work area outlets

Cabling standards

Horizontal cabling

Application	WAO termination	Cable	TR termination
Data, VoIP, and others not specified	TIA/EIA-568B **Blue** jack/keystone 12" slack	**Blue** Cat6 or Cat6a* UTP	TIA/EIA-568B 10' slack into cable management Cat6 or Cat6a modular (preferred) patch panel*** jack/keystone/snap-ins color match to WAO
CCTV/security cameras	TIA/EIA-568B **Yellow** jack/keystone 12" slack in plenum		
Analog telephony**	TIA/EIA-568B **White** jack/keystone 10-12" slack		
Wireless access points (APs)	TIA/EIA-568B **Black** jack/keystone 12" slack in plenum	**Black** Cat6 or Cat6a* UTP	
Audio/video patch connections local to one room	TIA/EIA-568B and **Gray** jack/keystone **if** RF45 termination	**Gray** Cat6 UTP	N/A

*   As required for speed or distance

** Analog telephony only where specifically scoped

Risers, backbone, and TR interconnections

New projects, major renovation, or new TR buildouts should include the following minimum connections between the MDF, IDF(s) and buildings:

Application	Cable	TR termination
Data, VoIP, and others not specified	**Aqua** color jacket OM4, 6-pair **Use only after consultation**	LC into modular/snap-in fiber patch and tray with 12' slack
	Yellow color jack OS2, 2-pair **Preferred**	
Analog telephony*	25 pair copper trunk	110 block

*   Analog telephony only where specifically scoped

Audio Visual cabling

New projects, major renovation, or new TR buildouts should include the following minimum connections between the MDF, IDF(s) and buildings:

Application	Cable	TR termination
Audio Visual	**Aqua seal or UV block – stranded copper** - depending on installation. **Consultation required**	In-wall boxes 2 1/8" deep **Consultation required**
	Black color – wire size per installation **Consultation required**	

Labeling standards

- Faceplates/ports/jacks at both WAO and TR ends should be typed or printed, permanent, and installed in accordance with manufacturer requirements (e.g. in labeling slots with clear protective covers). "P-Touch" or other consumer style labels are not acceptable.
- Labeling scheme: TR (if multiple) Rack (#) – Patch Panel (alpha) – Jack (#)
  For example, the 10th floor west IDF, rack 1, panel B, jack 16 would be: `10W 01-B-16`
  Single Floor building would not include floor number.
- Provide temporary labeling on cable jackets for use during pulling and installation.

Additional guidelines

- In-wall installation is always preferred over surface-mount.
- Install in wet/humid should be encased in schedule 40 conduit.

- Install where animals (mice/racoons/opossum/etc.) may come into contact should be encased in schedule 40 conduit.
- AV and network cabling will be in separate conduits.
- Match wall plates, surface block/biscuit jack, and surface raceway products to existing room or facility standards (white preferred).
- Comply with TIA-568 and TIA-569 standards for cabling, pathway, and EMI separation practices. Use plenum-rated cable.
- Conduct testing and certification according to TIA/EIA standards and provide documentation of satisfactory results.
- Panduit mini-con hardware is preferred.
  Corning for fiber optic termination hardware
- All terminations in the cabinet will be into Panduit min-con patch panel.
- Installers must present proof of Panduit or Corning certifications for all installs.
- Indoor plenum for all office buildings, outdoor for all other locations.