Welcome!

OSDM 2017 Update Webinar

Please Note:

AIA Credit or a Certificate of Participation: If you plan to watch this webinar in a group environment, and are interested in receiving credit, please note the following: to have documentation of webinar attendance, you will need to individually register and then individually login / logout for the webinar. This action provides an online documentation of your attendance.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

AIA CES/CEUs

Request a certificate of attendance – via email.

Wait for the last slide before sending request for certificate.

Certificate will be emailed to attendee after webinar.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

AIA CES / CEUs

Provider Name:
Ohio Facilities Construction Commission

Provider Number: G442

Course Title: OSDM 2017 Update

Course Numbers: Web24

Credits: 1.0 LU/HSW

Speakers: Various

Dates: May 24, 2017

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

AIA CES / CEUs

This course is registered with AIA CES for continuing professional education. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the AIA of any material of construction or any method or manner of handling, using, distributing, or dealing in any material or product.

Credit(s) earned on completion of this course will be reported to AIA CES for AIA members. Certificates of Completion for both AIA members and non-AIA members are available upon request.

Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.

Course Description

The Commission is pleased to announce that the 2017 Ohio School Design Manual (OSDM) update was approved by the Commission at its meeting in April.

The main focus of the webinar will be on the Telecommunications and Security sections of the OSDM that have gone through a substantial re-write to better align with the needs oriented approach to Technology Systems Design. Additional topics to be reviewed are regional cost factors and new school construction costs, programmatic changes in Career Tech, and a LEED/sustainability update.

Learning Objectives

- Learn about moving from prescriptive based to performance based criteria for systems design
- Learn about changes in design guidelines that place an emphasis on specific objectives that technology systems are expected to achieve
- Learn about how technology systems engineer a greater degree of flexibility to identify and design technology systems that support the district's overall technology master plan
- Learn about regional cost factors in Ohio and new school construction costs.

Will the Webinar be Recorded?

Yes – the webinar is being recorded and you will find the recording and the PPT in the OFCC Webinar Archive within five business days of the webinar.

Webinar Archive:

http://ofcc.ohio.gov/NewsEvents/Webinars/WebinarArchive.aspx

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

Have a Question?

Please use the Question feature on the right side of your screen at any time during the webinar.

Responses will be provided at the end of the webinar.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

Today's Presenters

Melanie Drerup
Chief of Planning, OFCC

Glenn Rowell
Planning Manager, OFCC

James Krile
Heapy Engineering

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 General Update

Melanie Drerup & Glenn Rowell

OFCC

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

2017 Ohio School Design Manual

Volume 1:
Educational Facility Planning Guide

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

2017 Ohio School Design Manual

Volume 2:
21st Century Learning Environment Guidelines

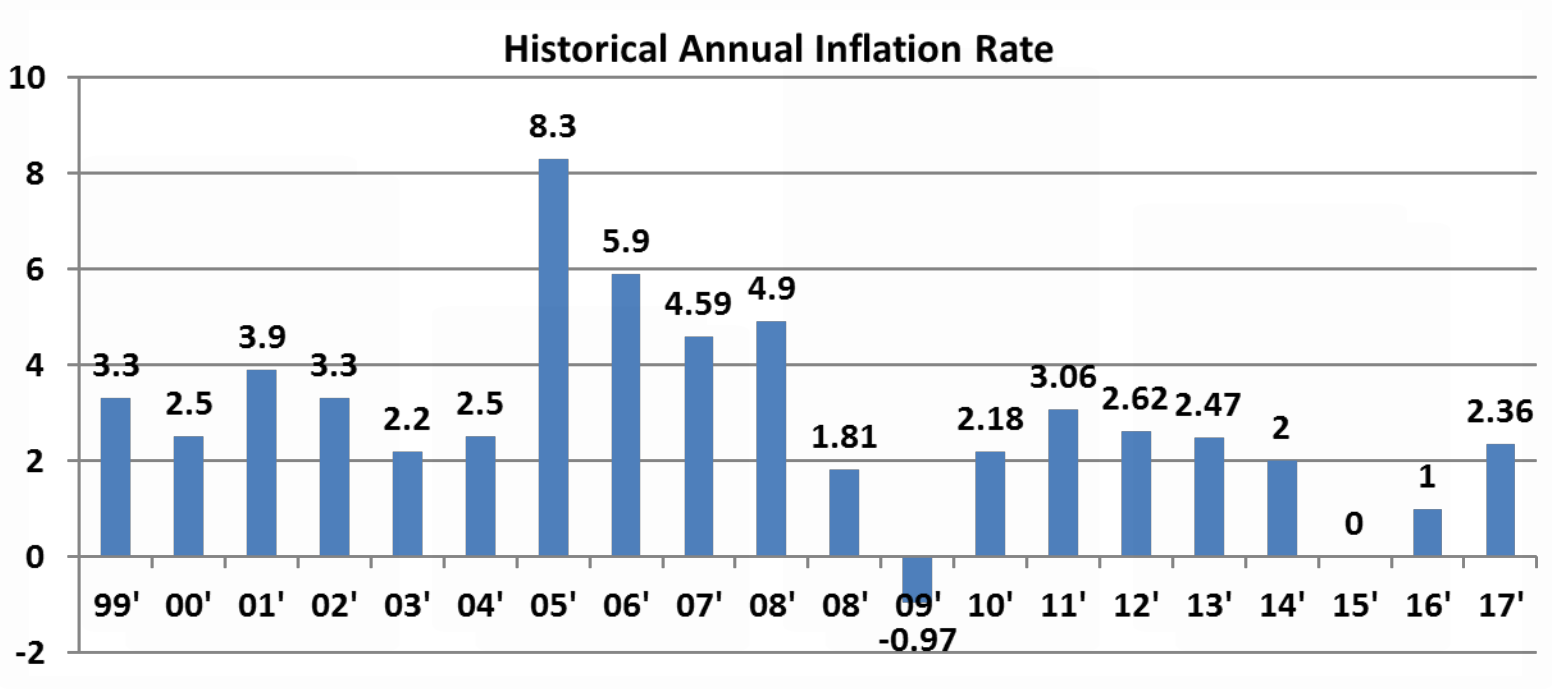
OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 Update Process

- Solicited input from design/construction professionals
- One change to assessment cost guidelines
- Regional cost factor update
- The rate of inflation for 2017 is 2.36%
- Volume 1 update
- Career Tech program, courses and pathways
- LEED/Sustainability Update
- Technology conversion from tech spec to performance spec

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

Historical Annual Inflation Rate



OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM - Volume 1 Update

- Educational Planner
- Educational Visioning
- OSDM Compliance
- Please know & love OSDM Volume 1

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 Update

- Career Technical Changes
  - 50 programs
  - 500 courses
- LEED/Sustainability Update
  - LEED Version 3 - Must secure 4 points
  - LEED Version 4 - ASHRAE 90:1 2010

OSDM 2017 Technology Update:

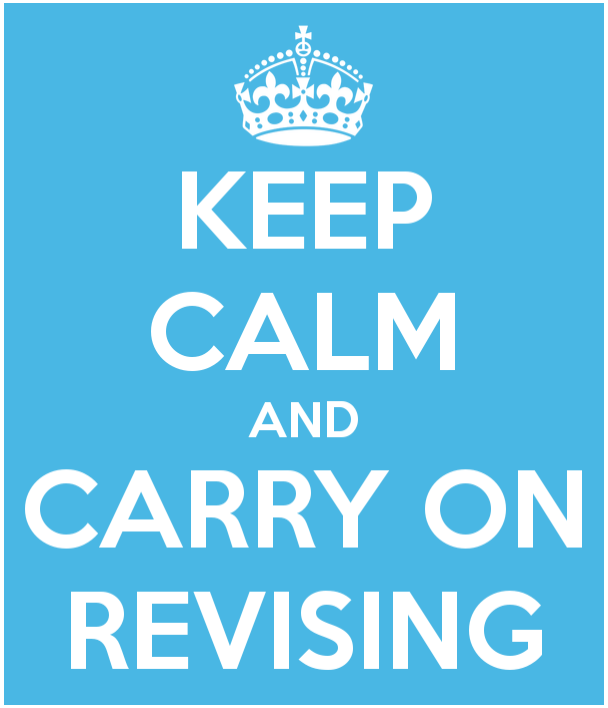
Division 27 Revisions
Division 28 Revisions

James Krile, Heapy Engineering

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

- Introduction
- Purpose
- Universal Changes
- Agenda
- Wrap-up



OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Purpose

- The Telecommunications and Security sections of the OSDM have gone through a substantial re-write in an effort to better align with the needs oriented approach to Technology Systems Design.
- The chapter 9, Division 27 and Division 28 design guideline specifications have been transitioned from prescriptive based to performance based criteria for systems design.

OSDM 2017 - Technology

Purpose (cont'd)

- The new specification sections reflect an approach to design guidelines that places an emphasis on specific objectives that technology systems are expected to achieve, without being prescriptive on the means/methods utilized to achieve those performance objectives.

OSDM 2017 - Technology

Purpose (cont'd)

- The new Division 27 and 28 Design Guideline Specifications will give both the school district and the technology systems engineers a greater degree of flexibility to identify and design technology systems that support the district's overall technology master plan.

OSDM 2017 - Technology

Universal Changes

- Performance based approach
  - Let the design professionals work with the schools to provide the systems they want and need.
  - No longer a “cookie cutter” approach to a school technology design.
  - Make manual more flexible to the pace at which technology changes.
- Removed drawings/illustrations from each section. May be re-introduced as Appendix – For Information

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Universal Changes (cont'd)

- Transitioned to more consistently referring to industry standards without limitations to editions/versions
  - e.g. BICSI TDMM, latest edition
- Reduce duplication of information. If an industry standard is called out, specs won't duplicate the specifics of that standard's requirements.

OSDM 2017 - Technology

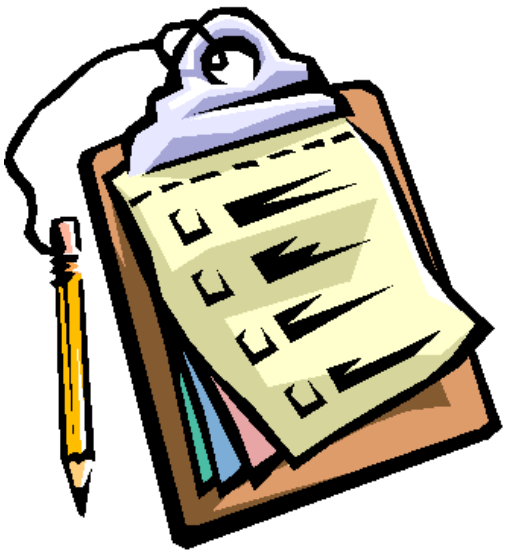
Universal Changes (cont'd)

- Changed language from "shall" to "consider" to be less prescriptive and more suggestive.
- Included more options for features and functions of the various systems.

OSDM 2017 - Technology

Agenda

- Section 8500
  - Overview of changes
- Division 27
  - Section
  - Overview of section
  - Summary of changes
- Division 28
  - Section
  - Overview of section
  - Summary of changes



OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 8500

- 1.01.A

  A. The Technology Systems Plans and Specifications shall be prepared in accordance with the latest edition of the BICSI Telecommunications Distribution Methods Manual (TDMM), the requirements of the OSDM as outlined herein, and shall be designed and approved by an RCDD or design professional with equivalent 3 years of experience. Refer to the OFCC Technology Phase Submission Form for DD and CD phase submittal requirements.

    A. Audio-Visual Systems shall be designed and approved by a designer with a CTS, CTS-D or CTS-I or an equivalent minimum of 3-years experience.

    B. Security Systems shall be designed and approved by a designer with a CPP, PSP, ESS, or an equivalent minimum of 3-years experience.

OSDM 2017 - Technology

Section 8500

- 1.01.A
  - Changed from RCDD with 3 years experience to RCDD or professional with 3 years equivalent experience.
- Changed references from OSFC to OFCC
- 1.01.K
  - Added requirement to verify operational parameters for wireless and opportunities to reduce hard wired outlets prior to designing.

OSDM 2017 - Technology

Section 8500 (cont'd)

- 1.02
  - IP enabled PBX is only for expansion of existing systems now. All new phones MUST be fully IP.
  - Added section for Emergency Responder Radio Coverage.
- Created sections 1.03 (Baseline) and 1.04 (Optional)
- Added references to specific Chapter 9 spec sections

OSDM 2017 - Technology

Section 8500

- In general, removed a lot of the duplicate spec language from this section to make it more of an overall summary for each system.
- 1.03
  - Revised cabling standard wording to “minimum Category 6” allowing CAT 6 or higher (including shielded) at school’s discretion without requiring a variance.
  - Added line items for Area of Refuge and Emergency Responder Radio Coverage
- 1.04
  - Optional systems are to be included based upon needs and budget.

OSDM 2017 - Technology

Chapter 9

Division 27

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 270526-Grounding and Bonding

- Removed illustrations
- Made a more generic section to require grounding while leaving up to the designers to follow standards.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 271100-Equipment Room

- Changed criteria for MER location and sizing.
- Changed criteria for TR/TE location and sizing.
- Added more detailed requirements for MER/TR/TE including construction, sizing, shape, location, adjacency, environmental, lighting, etc.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 271100-Equipment Room

- The basis of the requirements for this section are aligned with the BICSI TDMM
- Removed illustrations
- Revised section for racks to allow various types for various purposes.
- Cable management - removed requirements for specific sizes.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 271313-Copper Backbone

- Removed illustrations
- Removed requirements for specific pair counts.
- Allow, not require, UTP data backbones where length limitations are not an issue.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 271323-Fiber Backbone

- Removed illustrations
- Removed requirements for specific fiber types (singlemode, multimode) and strand counts. Make designer responsible for sizing fiber including capacity for future.
- Allow either armored open wired, or distribution style in inner duct.
- Clarified OLTS only testing required for indoor cable, and OTDR required for cable between buildings.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 271513-Copper Station

- Removed illustrations
- Changed language to be more generic about the specific type of cable (UTP, STP, U/FTP, etc.) and the Category of cable.
- Allow both 6 and 6A with recommendation or 6A or wireless.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 271513-Copper Station (cont'd)

- Wired drop locations are not fixed to space plate layouts, but are customizable for each project.
- Recommend separate patch panels for separate systems, but not specifically required.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 271543-AV Station Cabling

- Removed illustrations
- Recognize that newer AV systems design may incorporate wireless technologies.
- Designer responsible for conduit/box choice based upon the designed AV system, not a generic “one size fits all” standard.
- Removed specific outlet configurations (e.g. “Hi-Lo”)
- Added twisted pair cabling to support AV
- Added support for USB cabling.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 272100-Data Network

- **Major re-write**
- Removed illustrations
- Performance based spec for a LAN to be designed which incorporates both Edge (workgroup) and Core (Aggregation) switches.
- Edge switches
  - All minimum 1GB station ports
  - Stacking or chassis based
  - Minimum 10GB uplinks
  - All ports POE+, designer to be responsible for power calculations and sizing of power supplies.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 272100-Data Network

- Core switch
  - Layer 3 can be centralized
  - Chassis or stand alone
  - 40GB support
  - Dual power supplies.
  - Dual engines when chassis based with removable engines.
- File Server – Optional
- RADIUS – Recommended if district doesn't have.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 272100-Data Network

- Firewall – Provide if district doesn't have
- Training
  - New requirements for reduced training if this is an expansion of an existing system.
  - Allows the option for training vouchers in lieu of contractor training.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 272133-Wireless Network

- **Major re-write**
- Removed illustrations
- Performance based spec for a WLAN to be designed which incorporates specific wireless performance requirements as dictated by how the district intends to utilize the wireless.
  - Signal Level
  - SNR
  - Channel overlap
  - User density
  - Minimum data rates
  - Includes some recommended values
- Requirement for on-site validation survey from contractor.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 273113-IP Enabled PBX

- **Section deleted.**

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 273123-IP Telephone System

- **Major re-write.**
- Designer and district need to work together to put together the right combination of requirements.
- Spec is written around the types of equipment and features that should be considered.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 274119-Video Display Equipment

- **Major re-write.**
- Designer and district need to work together to put together the right combination of requirements for video displays (flat panel versus projector) in the various spaces.
- Spec is written around the types of equipment and features that should be considered.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 274119-Video Display Equipment

- Display sizing is recommended to be determined in accordance with ANSI/INFOCOMM V202.01:2016 Display Image Size for 2D Content in Audiovisual Systems
- Projector minimum illumination recommendations
- **Interactive options for any of the displays**
- **Optional equipment.**

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 274125-Digital Media

- **Major re-write.**
- Removed illustrations
- Very important to design a system compatible with district's wireless equipment (Chrome Books vs iPad vs tablet, etc.)
- Reorganized spec into "Modules" that should be considered. Not all schools will want all modules.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 275121-Student Dining – MS/ES

- **Major re-write.**
- 1.1. – TYPO – This is not for a Gymnasium
- Removed illustrations
- Spec is written around a general concept of a sound reinforcement system with sources and inputs and overall configuration as dictated by the district's needs for each individual building.
- List various sources and inputs to be considered, not required.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 275121-Student Dining – MS/ES

- Does require signal processing, amplification and options for types of speakers.
- Requires controls, but gives several options for how those are configured.
- Designer required to develop installation and testing specs.
- Requires intelligibility testing.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 275122-Student Dining - MS

- **Major re-write.**
- Removed illustrations
- Spec is written around a general concept of a sound reinforcement system with sources and inputs and overall configuration as dictated by the district's needs for each individual building.
- List various sources and inputs to be considered, not required.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 275122-Student Dining - MS

- Does require signal processing, amplification and options for types of speakers.
- Requires controls, but gives several options for how those are configured.
- Designer required to develop installation and testing specs.
- Requires intelligibility testing.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 275123-Central Sound

- **Major re-write.**
- Removed illustrations
- This is a designer/district choice between 2-way or all-call type system
- More options for head end and less “required” features.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 275124-Gym Sound

- **Major re-write.**
- Removed illustrations
- Spec is written around a general concept of a sound reinforcement system with sources and inputs and overall configuration as dictated by the district's needs for each individual building.
- List various sources and inputs to be considered, not required.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 275124-Gym Sound

- Does require signal processing, amplification and options for types of speakers.
- Requires controls, but gives several options for how those are configured.
- Designer required to develop installation and testing specs.
- Requires intelligibility testing.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 275125-Music Room Sound-MS

- **Major re-write.**
- Removed illustrations
- Spec is written around a general concept of a sound reinforcement system with sources and inputs and overall configuration as dictated by the district's needs for each individual building.

- Designer required to develop installation and testing specs.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 275126-Music Room Sound-HS

- **Major re-write.**
- Removed illustrations
- Spec is written around a general concept of a sound reinforcement system with sources and inputs and overall configuration as dictated by the district's needs for each individual building.

- Designer required to develop installation and testing specs.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 275127-Classroom Sound

- Removed illustrations
- Spec is written now to allow RF or IR based systems.
  - Several major problem has been encountered with IR based systems and interference that may make RF a better choice.
- More flexible in where/how the main unit is located/mounted.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 275313-Clock System

- Minor changes to equipment choices
  - Metal clocks not required.
  - Polycarbonate shield as an option in lieu of wire cage.
  - Optional class change countdown on digital clocks.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Chapter 9

Division 28

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 281300-EACS

- **Major re-write**
  - **The intent is that the designer and the district work together to determine the type of system (full blown fully integrated, or limited application) that will work best for the district.**

- Removed illustrations
- Written as a base system (just access control) and optional system (complete graphical based operation with full CCTV and IDS integration)
- Allows either IP to the door or centralized panels.

OSDM 2017 - Technology

Section 281300-EACS

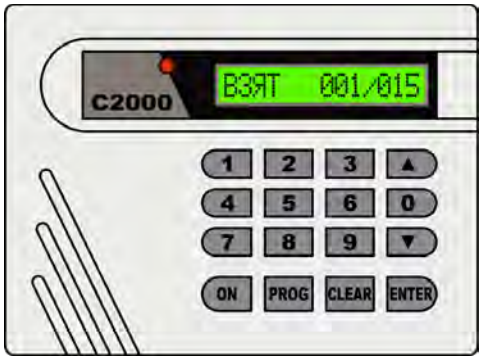
- Changed to credential readers in lieu of “card” readers to allow options for biometrics, etc.
- Provided list of doors that shall have electronic control
- List base line features and moved other features to Optional section
- Training
  - Designer to determine the amount of training that will be specified.
  - Allows the use of training vouchers in lieu of contractor training.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 281600-Intrusion Detection

- **Major re-write**
  - **The intent is that the designer and the district work together to determine is this type of system is even required based upon how the district operates each particular building.**
- Removed illustrations
- Written as a selection of the various detectors types that can be applied, based upon the area that is targeted for protection.



OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 282300-Video Surveillance

- **Major re-write**
  - **The intent is that the designer and the district work together to determine the type of system (full blown fully integrated, or limited application) that will work best for the district.**
  - **The intent is that the designer and the district wok together to define the required coverage areas and the quality of the coverage in the various areas.**
- Removed illustrations
- Recommend a BOD document be assembled in conjunction with owner meetings, to define the CCTV design parameters and owner's needs.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 282300-Video Surveillance

- Designer to determine more than just where cameras go
  - Set expectations for level of resolution
  - Set expectations for low/no light performance, IR illumination, etc.
- Section is a little more prescriptive than other sections, may still require variance requests if owner/designer has requirements that don't line up with manual.
- Training
  - Designer to determine the amount of training that will be specified.
    - More for new systems, less for system expansions)
  - Allows the use of training vouchers in lieu of contractor training.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 282600-Area of Refuge

- **Major re-write**
  - The intent is that the system can be either the Area of Refuge or the Emergency 2-way Communication System required for elevator lobbies.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 283213-Emergency Responder Radio

- **NEW Section**
- Section is written around a complete system with donor antenna, BDA and DAS for interior antennas to support only the 700/800 MHz emergency responder radios.
- For new buildings and additions, requires predictive modeling
- For renovations, requires RF site survey and predictive modeling
- This system is still a somewhat “hot-potato” as to how the designer’s will handle it on any given project.

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

OSDM 2017 - Technology

Section 283213-Emergency Responder Radio

- **Multiple ways to handle the ERRCS for a project**

  1. Wait until the building is built, have it tested, then decide if you need the system. If a system is needed, the design and construction will come as a change order.
     - A variant of this would be to include a bid allowance that would be used to fund the change order.

  2. Include a performance based spec for radio coverage so that a cost is included in the contractors bid. Once the building is built, have the contractor test and then provide a system that meets the performance spec, but the cost is already supposed to be covered by their bid.

OSDM 2017 - Technology

Section 283213 (cont'd)

3. Design a complete coverage system and include in the bid. Once the building is built, have the contractor test and then provide only as much system as required to meet the actual conditions.

- A variant of this is to include a unit price breakout from the contractor for the ERRCS to identify its cost. If testing of the building reveals that a system is not required, the deduct to the project has already been identify by unit price during bid, and the cost can be deducted from the project.

OSDM 2017 - Technology

Wrap-up

- The Technology section going forward will be more in line with the remainder of the OSDM in outlining more performance based requirements.
- The goal is to make the manual less dependent on changing technology standards, and therefore more adaptable in accommodating both advancements in technology and the program requirements across varied school districts.
- One implication of the new manual approach is that designers will need to be more “hands-on” and proactive in developing the design parameters from the district for each project.
- Minimizes the “cookie cutter” approach to tech design or the “This is what the manual says you get” approach.

OSDM 2017 - Technology

Questions?

Contacts:

Glenn Rowell

glenn.rowell@ofcc.ohio.gov

James Krile, Heapy Engineering

jdkrile@heapy.com

Melanie Drerup, OFCC

melanie.drerup@ofcc.ohio.gov

OFCC

OHIO FACILITIES CONSTRUCTION COMMISSION

A Reminder…

If you are interested in a *certificate of participation* for your attendance at this OFCC webinar, you will need to individually register and then individually login / logout for the webinar. GoToWebinar provides us with a login and logout time for each attendee which acts as the digital documentation of your attendance for certification and auditing purposes. In order to receive a certificate of participation, attendees must attend the *entire* webinar. *Please wait for the last slide to appear that indicates webinar has ended.*

Credit is not offered to attendees who watch an OFCC webinar in a group environment.

This process has been approved by the Ohio Facilities Construction Commission and the Ohio Architects Board / Ohio Landscape Architects Board

OFCC
OHIO FACILITIES CONSTRUCTION COMMISSION

This concludes The American Institute of Architects Continuing Education Systems Course

Provider Name: Ohio Facilities Construction Commission

Provider #: G442

Contact: sue.meyer@ofcc.ohio.gov

OHIO FACILITIES CONSTRUCTION COMMISSION