Part 1 General

1.1 Summary

.1 Unless otherwise indicated, follow the guidelines below when planning for Standard Audio-Video Installation Practices. These guidelines are not intended to restrict or replace professional judgment.

.2 This section of the AV standards is a reference for the AV Contractor, concerning the installation of equipment and infrastructure related to audio, video, and control. The detail listed in this section serves to give the AV Contractor an idea of common practice in AV installation campus-wide and is the McGill University's minimum standard for quality. All aspects of installation are subject to inspection and approval by IIS-AVS.

Part 2 Video Projector Mounts and Screens

Largely, rooms on campus will require the projector to be ceiling mounted. Occasionally, a projection booth may be found in the room, in which case, the projector may be ceiling mounted or floor mounted. Screen size (width) should be approximately:

$$\text{Screen Width} = \frac{\text{Distance from Screen to Last Seat}}{4}$$

2.1 Mounting projection screens

Electric screens must be anchored to the ceiling slab. If this is not possible, screen brackets must be attached to a ¾ inch piece of plywood the width of the screen. The plywood must then be secured to the gypsum walls using a minimum of 8 toggle bolts.

2.2 Projector mounts

Projector mounts must be installed at an appropriate distance from the projection screen, so that the correct image size is approximately in the middle of the specified projector's zoom range. The following requirements also apply:

.1 The projector mount shall be installed such that the vertical position of the projector lens is level with the top edge of the screen's projection surface, or at a position prescribed by the projector manufacturer, with **no** digital correction employed (keystone or arc).

.2 Projector mounts must be secured to the cement slab, or other foundational element, in the floor or ceiling such that if a false or suspended ceiling exists, it is not part of the support. Mounts should be secured to the slab or other secure surface with appropriate fastenings (e.g., Lag Bolts).

.3 For maintenance purposes, the projector mount must not block access to the projector's service areas. The mount must allow for changing the projector lamp and for cleaning the filter without removing the projector from the mount.

Part 3 Infrastructure

3.1 Cables

.1 Cable runs

Cables shall be pulled in a continuous run. No cable splices shall be permitted. No female-to-female adapters shall be used in the case where a new cable run exceeds the length of an existing cable. In cases where a signal type does not permit the necessary cable run length, extender or converter devices may be used, as approved by IIS-AVS.

.2 Cable bends

Cable bends shall respect the minimum bend radius stipulated by the manufacturer. During installation, the cables shall not be kinked or bent past their specified minimum bend radius. If no bend radius information is supplied by the manufacturer, a minimum bend radius of four (4) times the cables diameter shall be used.

.3 Cable dressing

Cables not run within a conduit or Panduit style wire mold product shall be dressed in a tidy and secure fashion. Any cabling runs terminated inside an equipment rack shall be dressed, utilizing any cable management products available inside the rack, and shall be strain relieved using Velcro ties.

.4 Cable Termination

All cables must be properly terminated,0.6 (pr)-1.3 (o96 ( )0.5 (or)-1.4 ( )0.6 (P04 (8 4[9mA (t)3.6 (pe)6.1 (

requirements to isoatan-1.3 4tT2e22914

- Serial control: RS-400
- Crestnet: CRES-450
- Crestron Digital Media:

Standard Audio-

.9 All ~~conduit and~~ electrical circuits should have the same ground reference.

.10 In cases where power transformers are required, all audio, video, computer and control electrical circuits should be fed from the “clean” legs of the transformer and should be free of high inductive loads. There should be no elevator motors, compressors motors, blower motors, etc., on the side of the power transformer that feeds the media equipment.

.11 All electrical control circuits (per classroom) should come to a single location. This location should be large enough to house the lighting contactor’s cabinet and should be convenient for maintenance and secure from vandalism. If possible, this location should be isolated from the classroom to eliminate repair and contractor noise.

.12 There must be electrical circuits dedicated for the media equipment (i.e., data projectors, portable VCR’s, laptops, audio amplifiers, etc.). These circuits must be brought to the equipment rack, and to the podium.

~~.13 There should be at least one duplex outlet on each wall. If there is a projection booth, there must also be an outlet on the front, classroom side wall. In larger rooms with fixed seating on risers, an outlet should be provided on the face of the first riser (centered in the room), this for the use of overhead projectors. Another outlet should be located on the face of a riser midway back in the seating area (centered in the room).~~

.14 Whenever possible, power and audio/video outlets shall not be floor mounted to avoid the intrusion of water and debris.

.15 In classrooms with dimmable lighting (Lightolier or Lutron), the appropriate control interface with the Crestron control unit must be specified by the electrical engineer and provided by the electrical contractor. ****Note: The design of lighting zones within a classroom shall be done such that lights closest to any projection screens may be turned off during projection. ****

.16 In the case of motorized blinds, a control interface will also be required for the Crestron control unit. Any such control interface shall be specified by the Electrical Engineer on the project and supplied by the electrical contractor.

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fundamental to a design that takes the function of the AV equipment and the support and maintenance of said equipment into account:

.1 Space considerations

.1 Space on the desktop

All podium designs shall allow enough space on the desktop of the podium for ease of use. The following shall be considered:

- The desktop of the podium shall have enough space for all user operated equipment, services, and auxiliary devices (i.e., laptops, hard drives, etc.).
- In addition to the above point, there shall be space allowed for physical documents, (i.e., books, paper, etc.).
- The desktop of the podium shall allow space for the ITS Help phone, either on the desktop itself, or within reach of the AV system's control surface.

.2 Space for infrastructure

All podium designs shall allow an appropriate amount of space for the infrastructure connecting equipment in the podium to the equipment in an AV equipment rack. The following shall be considered:

- Clearance for cables that need to move:
  - Cables connecting the podium to the rest of the AV system, when the podium goes up and down, or rotates.
  - Cables for the laptop connectivity that need to slide in and out of the podium (must be easy for the user to pull out and push in, with enough clearance to reach where it needs to.)
- Space allocation for equipment not operated by the user (Automation system transmitters, etc.):
  - There must be adequate space between devices, and devices must not be completely enclosed, to avoid overheating.
- Space allocation for possible future equipment.

.2 Ventilation

Proper ventilation of the equipment is of great importance, especially when considering integration into enclosed or semi-enclosed spaces, such as furniture. The following shall be

- There shall be vents or air holes in the furniture if the equipment is at all enclosed.
- If passive venting is not satisfactory, then fans must be integrated to ensure proper airflow.

.3 Maintenance

A podium shall be designed with a mind for future maintenance of the equipment integrated into it. The equipment must be quickly and easily accessible and must be secured. Locking hinged access traps are recommended.

.4 Safety

A podium design shall consider the safety of its users. The users should not have access to moving parts that may cause injury.

Part 8 Equipment racks

This section describes the optimal location of an equipment rack within a facility, as well as the expected quality of the integration of the infrastructure and equipment within the rack itself.

8.1 Location

.1 AV/Telecom closet

Wherever possible, the equipment rack housing AV equipment shall be secured within an AV/Telecom closet, keyed with a **Medeco KB** key (Section **27 41 02; Part 5.2**). Ideally, this AV/Telecom closet would adjoin the classroom, for ease of support once the room is in operation. However, there are occasions when such a telecom closet may not be directly adjoined with the room it serves but located in a central area on the floor of the building in which it resides.

.2 Open areas

On some projects, due to fhilespae(n)]TJ-29.964 -1.1 s 50.6 (be)0.6 (2)-2 (e)6.1 (]TJ0 0.1a)6w 3.329 0 T

specifies and supports computer models for Podium PCs and Computer labs on renovation projects.

.4 **IIS**: *IT Infrastructure and Information Security*. IIS is a division of McGill's Information Technology Services (ITS) that encompasses 7 unique teams including, but not limited to, Audiovisual Services (AVS) and Telecommunications Infrastructures and Systems (TIS). IIS *Inforlation*