Technology Conditions

Telecommunications service for the building consists of copper and optical fiber cabling. Incoming telecommunications copper cabling from the service provider enters the building at the west end of the Lower Level Mechanical Room and routes to the Lower Level Telephone Equipment room. Copper backbone cabling to serve Madison Municipal Building spaces is then routed to telecommunications rooms on the First and Third floors. Existing service entrance copper cabling is in good condition. However, the telecommunications room used for service entrance is at maximum capacity, and is undersized in comparison to what is required by ANSI/TIA/EIA-569 Standards.

Telecommunications Service Entrance Room

Incoming optical fiber enters the building at the south end of the Maintenance Shop on the Lower Level and routes to the telecommunications rooms on the First and Third Floors.

The existing telecommunications infrastructure that routes from telecommunications rooms to work stations has exceeded its useful life. Current station cabling consists of Category 5 copper cable, capable of delivering data speeds of 100 Megabits per second. Cables are terminated on rack mounted patch panels in dedicated telecommunications rooms located on the first and third floors.

Telecommunications rooms do not meet current ANSI/TIA/EIA Standards for Telecommunication Spaces in Commercial Buildings. Several inadequate conditions were observed:

- ANSI/TIA/EIA 607 compliant grounding system is not present in any of the telecommunications rooms.
- Lighting does not meet the minimum illumination requirements of ANSI/TIA/EIA 569 Standard.
- Telecommunications rooms are being used for storage of nonrelated equipment.
- Dust, debris, and waste are scattered throughout telecommunications rooms.
- Cabling within telecommunications rooms is routed through J-Hooks, allowing cables to exceed manufacturers minimum allowable bend radii, which has a negative impact on data transmission.
- Patch cable routing between patch panels and switches has not been accomplished in an orderly fashion, which can lead to data outages.
- Ventilation within telecommunications rooms is not adequate for the support of active computer networking equipment.
- Telecommunications conduit sleeves routing into telecommunications rooms do not appear to be adequately firestopped.

- First floor telecommunications room houses co-located electrical panels. Locations of the panels combined with size of the room do not allow for any future growth of the telecommunications systems.

First Floor Telecommunication Room Room

Third Floor Telecommunications

The U.S. Post Office maintains separate telecommunications systems. It is unclear if a separate service entrance feeds this space, or if it shares the building service entrance. Station cabling in this space is a combination of Category 3, Category 5, and Category 5E routed from wall mounted patch panels to work stations. Telecommunications equipment is located within a small closet within the space. The telecommunications room within this space shares the same deficiencies listed above.

U.S. Post Office Telecommunications Room

Telecommunications cross connect enclosures are located in the walls at the West end Second and Third Floors within the corridor. These enclosures do not have covers installed, but appear to be abandoned infrastructure.

Telecommunications enclosures

A limited number of card access devices exist within the facility. Card access is provided through a KeyScan access control system. Devices are in good condition and meet the City of Madison's current standards. The system also includes some limited intrusion detection functionality. The Lower Level Mechanical Room houses two keypads used to monitor windows on the First Floor. Maintenance personnel indicate that these devices are not functional. It is not immediately clear which windows these devices were monitoring.

A sound masking system exists to mask noise of fan control units on Lower Level and First Floor. The head end equipment is located in the Lower Level Mechanical Room. Devices are discontinued by the manufacturer, although appear to be functioning properly.

Recommendations

In an effort to bring the telecommunications infrastructure up to current ANSI/TIA/EIA standards, the following recommendations should be considered:

- Provide telecommunications rooms on each level. Minimum recommended size is 8' x 10'.
- Provide lighting within telecommunications rooms to achieve 50-foot candles when measured at 3' above floor.
- Remove all waste and unrelated storage from telecommunications rooms.
- Provide static free vinyl flooring within telecommunications rooms.
- Provide additional ventilation within telecommunications rooms to achieve a temperature range of 68-74 degrees.
- Upgrade station cabling to Category 6 or higher.
- Provide ANSI/607 compliant telecommunications grounding system.