TECHNOLOGY ASSESSMENT

Introduction:

This document represents a report on the existing voice and data infrastructure at Hillside and Mitchell Elementary Schools in Needham, Massachusetts. Information in this report was derived from a thorough review of the facilities and meeting with IT Staff.

Overview

The horizontal data cabling in the facilities is mostly Category 5 copper. The data cabling terminates on Category 5 patch panels. Most of the telephone cabling is Category 3 copper. The telephone cabling terminates on 110 punch-down blocks.

The facilities do not have dedicated spaces for technology cabling management. Patch panels are located in custodial closets with sinks, and even in roof access ways.

Mini switches are installed in every classroom of each facility. This mini-switch takes one data cable connection and connects it to several computers.

The facilities have Rauland Telecenter public address systems of older vintage. The systems are not functioning well. The clock systems are vintage line voltage based and not integrated with the public address systems. Many of the secondary clocks are not keeping time or synchronizing. There are public address speakers in hallways, classrooms, and group spaces such as the Cafeteria. Classrooms have wall mounted speakers, wall clocks, and public address system handsets on the wall for communications with the front office. The PA system runs independent of the telephone system. The telephone systems are not meeting the needs of the schools. There is no access to voicemail for teachers.

Approximately half of the classrooms at Hillside have functional Smartboards (Gen 3) and approximately half of the classrooms at Mitchell have Mimios.

Technology-Related Concerns:

- Loose cabling across floors due to lack of raceways

- Exposed cabling installations

- Overall quality of installation is very poor

- Mini-switches in every classroom – management and bottleneck

- Data patch panel locations

- Lack of isolation between Technology Centers and Libraries – shared space

- Electrical issues are creating problems for the technology

Technology Recommendations:

The ultimate goal is to provide equity between and among the elementary schools for all students for the perspective of technology.   Hillside and Mitchell Schools should match the Broadmeadow Elementary School as a standard, as such, we recommend the following:

- Kindergarten classrooms have one student computer, grades one and two have two student computers, grades three to five have one student computer and also share laptop carts. There are two laptop carts per elementary school (30 laptops per cart). All teachers have a computer. Centralized printing is also the goal.

- The cabling standard should be 7-10 data drops per classroom including five for student use, one for teacher use, one for connecting a projector to the network, and additional for flexibility.

- There should be a telephone in every classroom with the cabling flexibility to locate it adjacent to the corridor door or at the teacher's desk. The facilities should be prepared for an enterprise level wireless networking solution, the ultimate goal being one to one computing.

- All classrooms should have an interactive markerboard /audio-visual setup including audio reinforcement similar to those installed at Elliot, High Rock, and Pollard Schools. Additional systems are required at Hillside and replace Mimios with Smartboards at Mitchell.

- There should be a master clock controller with secondary clocks - integrated with the public address system.

- Installation of voice, data and video horizontal cabling in accordance with elementary school and industry standards.

- Installation of Network Switch Electronics

- Appropriately sized and environmentally treated MDF/IDFs

- Dedicated spaces for MDF and IDF(s)

- Environmental treatment for Computer Labs

- Wireless site surveys and appropriate enterprise-class wireless coverage for 1-to1 computing

- New Public Address Systems

- New Master and Secondary Clock systems

- New Telephone systems based on system at Broadmeadow School

- New Audio/Visual Systems in the Cafeterias