

Erie County Technical School – Regional Skill Center

ECTS HS Renovation – Infrastructure – HVAC, Plumbing and Electrical

- **Full scale renovation – one project**
 - Address all issues at once including reorganization
 - Coordination of replacement – ceilings, floors and windows
 - Same components – one responsibility, consistency
 - Warranties the same
 - One mobilization cost
 - One inconvenience
 - Establish efficiencies – removal of ceilings floors, windows, coordination with roof
 - Cost
- **Project based renovation – several individual projects**
 - First HVAC, then electrical, then plumbing, then roof
 - Address issues as separate projects
 - Proprietary components (such as controls) can result in higher costs for future projects
 - Inconsistent manufacturers (boilers, air handlers, etc.)
 - Questions regarding system responsibility
 - Warranties different
 - Several mobilization costs
 - Inconveniences over a few years
 - May be touching a couple of areas twice – ceilings, windows
 - Higher cost, but spread out over several years
- **ECTS HS Potential Projects**
 1. Lighting controls, fire alarm, intercom and clock
 2. Replace electric service and branch distribution, switchboards, sub panels and increase size of generator
 3. Add sprinklers – drop ceilings
 4. Replace rooftop units and PTACS in business office
 5. Replace chiller
 6. Replace boilers
 7. Replace chilled and hot water piping
 8. Install DDC controls, replace AHUs/UV
 9. Replace plumbing fixtures and some floors
 10. Replace exposed sanitary, domestic hot and cold water
 11. Replace windows
 12. Replace roof
- **RSC - Potential Projects**
 1. Lighting controls, fire alarm, intercom and clock
 2. Replace electric service and branch distribution, switchboards, sub panels
 3. Install emergency generator (or central battery inverter)
 4. Add sprinklers – drop ceilings
 5. Install DDC controls, replace makeup air units, replace multi-zone unit
 - Consider upgrading to variable air volume (VAV)
 - Consider upgrading to hot water heating plant (boilers, pumps and piping)
 6. Replace plumbing fixtures and some floors
 7. Replace exposed sanitary, domestic hot and cold water
 8. Replace windows
 9. Replace roof

Miscellaneous ECTS HS and RSC Information

- Space utilization at capacity
- Age and condition of infrastructure
 - **ECTS HS**
 - Built in 1968
 - 1986 addition to Auto Mechanics
 - 1993 last renovation
 - 1999 HVAC improvements
 - 2010 lighting upgrades
 - **RSC**
 - Built in 1976
 - Minor improvements over the years
 - 2009 Transition Center
 - 2010 Lighting Upgrades
- Land
 - 146 acres
- Areas
 - ECTS HS – 110,000 square feet – 18 programs
 - RSC – 43,000 square feet – various programs

Site

- Cars and buses separated
- Some sidewalks addressed
- Drainage needed
- School sign

Structure

- Walls and structure in good condition
- Roof 90% out of warranty
- Metal fascia and soffit – renovated

Windows

- Single pane windows need replaced
- Dual glazed windows – seals have failed

Entrances and exits need replaced

Building organization – fair

- Related activities need better grouping
- Public areas require better supervision
- Improve security and access

Typical classroom improvements

- HVAC, ceilings and acoustics,
- Doors and hardware, markerboards and smartboards, painting and floors

Code compliance

- Sprinklers
- Rated walls
- PDE
- Recessed doors

ADA

- Doors – width and hardware
- Signage – height, location and braille
- Toilet rooms – route, turning radius and grab bars

ECTS HS - HVAC

- Chiller – out of date, two compressors failed, inefficient, no leak detection & evacuation system
- Boilers – original from 1968, inefficient
- Air Handling Units – many are from 1968
- Chilled and hot water piping – original from 1968
- Pneumatic/electric controls – poor control, limited zoning, limited access
- Poor humidity control
- Educational spaces without cooling or windows
- Poor zoning (School and Business Offices)
- Business Office PTAC units – poor comfort, noisy
- Solar load in main entry

ECTS HS - Plumbing

- Fixtures – replace with ADA compliant fixtures with hands-free
- Hot and cold water piping – original from 1967
- Sanitary and vent piping – original from 1967
- Replace wash basins in shops
- Domestic water heater from 1992 – inefficient and beyond expected longevity
- No bypass on water service
- No sprinkler system
- Kitchen – add grease trap
- Cosmetology – add hair traps

ECTS HS Electrical

- Original electric service, outdated and undersized
- Original branch panels and distribution, outdated and undersized
- Main electric switchboard located in mech room. Ideally, this equipment is in a dedicated room
- Excessive number of transformers – inefficient
 - Add sub-distribution panelboards to consolidate number of transformers
- Emergency generator – undersized, location of generator is not in compliance with NFPA 110
- Heating system not powered by emergency generator
- Lighting control by wall switches, IECC requires lighting control system
- Replace fire alarm system – outdated with no expansion capability
- Upgrade intercom and clocks

RSC - HVAC

- Failing multi-zone rooftop unit (3 of 4 compressors not operating), inefficient, insufficient ventilation air
- Makeup-air units – from 1990's, extremely inefficient due to 100% outside air configuration
- Gas-fired heat exchangers (all rooftop units) – inefficient, beyond expected longevity
- First floor occupied spaces lack cooling and windows
- Pneumatic/electric controls – poor control, limited zoning, limited access

RSC - Plumbing

- Fixtures - replace with ADA compliant fixtures with hands-free
- Hot and cold water piping – original from 1975
- Sanitary and vent piping – original from 1975
- No sprinkler system

RSC - Electrical

- Original electric service, outdated and undersized
- Original branch panels and distribution, outdated and undersized
- Insufficient number of classroom receptacles
- No emergency generator – individual battery packs. Consider emergency generator or central inverter and powering heating system off of generator
- Exit signs are not IBC compliant
- Lighting control by wall switches, IECC requires lighting control system
- Replace fire alarm system – outdated with no expansion capability
- Upgrade intercom and clocks, connect to ECTS HS