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**Existing Building Survey and Feasibility Study
for the:**

**Erie County
Technical School**

8500 Oliver Road
Erie, Pennsylvania 16509

ECTS

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Erie County Technical School

Building Renovation and Expansion

Feasibility Study

2009-2010

Executive Summary

Introduction

For several years now, the joint operating committee, superintendents, and faculty and staff have been discussing the need to renovate the Erie County Technical School and Regional Skill Center. A building project would correct deficiencies in existing programs, expand facilities to accommodate new programs, and perhaps add classroom space so the school could change to a full-day comprehensive program (technical with academics). As part of the school's strategic plan in 2007, a goal and action plan were developed to conduct a feasibility study and to make a commitment to renovate and expand the facility.

In the following four sections, this executive summary presents the rationale for a renovation and expansion project at ECTS. The first section, *The Need*, identifies the functional issues the school is currently facing, with regard to facilities. The second section, *The Opportunities*, discusses what can be accomplished with this proposed building project. The third and fourth sections, *Brief Facilities History* and *Current Facilities Description*, provide historical and background information to support the decision-making process to move this study to an implementation stage.

The Need

1. Main campus building fully utilized

Space utilization at the technical school building is at capacity, in terms of both instructional and auxiliary space (office, conference, and storage areas). Even though the technical school has an interest in adding technical training programs, there is no space available. In fact, some laboratories are in spaces considered inadequate for their current use. The Tourism and Hospitality Management program only has access to a classroom. The Networking Technologies program is housed in a small classroom that was not designed for 'high-end' computer training.

In order to meet the growing need for classroom and office areas, the facilities department has converted several areas to different uses. As examples:

- a) A tiered auditorium (Room 18) was converted to a 'flat-floor' classroom
- b) A storage area (Room 14) was converted into a two-station office
- c) A classroom (Room 40) was converted to office space to accommodate alternative education faculty and staff; and
- d) Our Information Systems and Technology Manager uses an 'office suite' designed for a school nurse.

Based on current and projected enrollment patterns, regional workforce projections and state program closure requirements, we do not foresee laboratory space becoming available due to program changes. We have also used all of the space that could be converted to other uses without extensive costs. Each year we squeeze a few more things into existing spaces. We anticipate the demands will continue to grow on our instructional and auxiliary spaces.

It is worth mentioning that the Skill Center also has a high usage rate. Of the approximately 40,000 sq. ft. of space, 75% of that space is utilized for instructional purposes. The Skill Center houses RCI Dual Enrollment classes four days a week, and the career alternative education and Transition Center programs five days a week. Hours of operation are from 8:00 a.m. to 7:00 p.m. The remaining 10,000 sq. ft. is used as a storage area for the technical school and leased storage space to the Intermediate Unit.

2. Age & Condition of Infrastructure

The last renovation was completed in 1993. As a means of controlling costs for that \$6 million project, several key infrastructure items were not updated. The boilers, most HVAC units and the main electrical distribution system are from the 1969 installation. The exterior fascia is the original paint and now showing significant signs of rust. Some of the improvements in 1993 are now reaching the end of their life expectancy, or new technologies over the past 16 years are more efficient. The deficiencies noted here are explained more fully in the Tower Engineering Report.

As noted earlier, many programs are operating in spaces considered to be inadequate for effective instructional purposes. Tourism & Hospitality Management and Networking Technologies are new programs that were placed in classrooms in lieu of laboratories. In 1997, the Culinary Arts program was expanded from a single teacher program to a double teacher program. To accommodate the expansion, a production kitchen was used as an instructional kitchen. The accessory spaces like locker rooms are severely undersized for the number of students enrolled in the program. The Career Alternative Education program accepts middle school students in an area converted from a delivery/storage room into a classroom.

Small group interviews were conducted by Chris Coughlin, of Hallgren, Restifo, Loop and Coughlin, with all faculty and staff regarding their space and facility needs. Infrastructure

and space issues were identified during the interviews. Every program has some need to improve space or services. A compilation of those interviews can be found in the appendix.

3. Enrollment should grow

For the past several years, several hundred students have been ‘turned away’ from ECTS because the programs they were interested in had already met their enrollment capacity. Cosmetology, Health Assistant, Early Childhood Education, Metal Fabrication and Culinary Arts have each had more students interested in the program than there were seats available. The enrollment at ECTS could easily increase 100 students annually if we could increase the capacity in popular programs.

Campus enrollment could also increase if ECTS offered programs where significant student interest exists. Examples of programs that students are interested in but not available at ECTS include Natural Resources & Environmental Studies, Public Safety Services, Diesel Mechanics, Web Design & E-Commerce and Pre-Engineering. With just a minimal enrollment in these areas, the ECTS enrollment could increase another 100 students each year.

Finally, serving students whose plans include postsecondary education is constantly a challenge. Despite over 50% of ECTS students going on to postsecondary education, many families perceive ECTS as a ‘not-for-college’ school. There are also students we could serve whose career plans are incomplete. When more families see ECTS as the ‘best path’ to their careers, they could enroll. We must continue to design and deliver technical training programs so families perceive ECTS as a viable career preparation option. New programs, current programs in new spaces and new academic offerings will significantly improve our capability to attract and serve these students.

The Opportunities

Many of the opportunities associated with a building renovation and expansion have already been alluded to in previous sections. To present a comprehensive overview of the opportunities associated with this building project, the following list is provided. The specific opportunities include:

- 1. Build instructional areas for new programs to train for evolving, high priority occupations and expand program offerings to meet career aspirations of a broader spectrum of students.*

The new programs include:

- a. Health Technician Occupations and Pre-Nursing

- b. Computer and Internet-based Occupations
 - c. Engineering Occupations
 - d. Public Safety Services
 - e. Natural Resources & Environmental Sciences
 - f. Diesel Mechanics
2. *Create additional instructional space for oversubscribed programs to meet current student demand for career and technical education.*

In particular:

- a. Cosmetology
 - b. Early Childhood Education
 - c. Health Assistant
 - d. Metal Fabrication
3. *Create an instructional environment that allows for the integration of academic and technical instruction.*

In a feasibility study focus group conducted with the superintendents, one of the superintendents posed the question, "What would we build if we were starting from scratch?" The question dealt with a discussion about adding academic classes at the technical school, making it a comprehensive technical school, and allowing students to attend ECTS on a full-day basis. The consensus was that for many students, a comprehensive model would best serve their academic and technical education needs. If this kind of delivery model is adopted, additional classroom space will be needed to accommodate the core academic classes.

In a 2008 survey, students were asked, "If ECTS offered the academic classes of math, English, social studies and science, would you choose to attend ECTS all day?" Of just over 600 responses, 37% responded "Yes" and 34% responded "Maybe." Nearly 440 students expressed an interest in attending the technical school all day. This indicates a clear interest of many students to obtain their academic and technical education in a single setting.

By adopting a comprehensive delivery model, there is the potential for gains in academic and technical education achievement. There are also significant opportunities for districts to save on transportation and instructional costs.

4. *Create an instructional environment to fulfill the needs of the Regional Choice Initiative.*

For the participating school districts, the Regional Choice Initiative, and the dual enrollment program in particular, is a shining example of what can be accomplished collaboratively. Unfortunately, the RCI college-bound students use classrooms built in 1976 that were

intended for 'industrial and manufacturing' training. At the time, these classrooms met the need. These classrooms have had minimal updates and lack the infrastructure to support a 21st century instructional environment, especially one intended for college-level classes.

5. Create an instructional environment that meets the needs of alternative education programming.

Our alternative education program currently operates on a schedule different from our regular school hours, due in part to space availability. The unique student and instructional characteristics of this program call for unique classroom space. Both our high school and middle school programs overlap with the high school and adult education programs. They also use classrooms and laboratories in a second-hand fashion. Ideally, the alternative education program should operate in dedicated and isolated space from other programs.

6. Create an instructional environment to meet the needs of a technical/community college.

As the community discussion continues and the possibility grows of Erie County having a community college, there may be a need for classroom, laboratory, office space and a library for the college's operation. A preliminary proposal identified ECTS as a possible site for technical programs of the proposed community college. From a strategic perspective, renovations and expansion of the ECTS facilities could serve some or all of the facility needs of the proposed community college.

7. Project Reimbursable in 2012-2013

The Pennsylvania Department of Education reimburses school districts for approvable building projects. Under the 20-year rule, ECTS is eligible again for state reimbursement of a renovation and expansion project in 2012-2013. Per PlanCon guidelines, career and technical centers (CTC) typically have a higher reimbursement rate than secondary or elementary schools. There is also a higher reimbursement rate for movable equipment for CTCs.

A Brief Facilities History

1. Erie County Technical School

The Erie County Technical School was built in 1968. A consortium of 19 school districts authorized the construction. Its use remained consistent with its design for many years. In 1992-1993, a \$6 million expansion and renovation project was conducted. Unfortunately, little attention was given to infrastructure, most notably HVAC and electricity. Only a few program spaces were expanded.

In 1995, an addition was provided to the construction trades program, allowing for much needed indoor instructional space. An HVAC project was carried out in 1999, due to indoor air quality issues. The C-wing HVAC system was completely replaced along with renovations of the cafeteria and high school office systems.

Since 1999, no major building projects have been conducted at the school, although many have been discussed.

2. Regional Occupational Skill Center Building

The Skill Center was built in 1976 as a cooperative effort between the business and educational communities of Erie County. The bulk of the funding came from federal Appalachian funds and state school building authority funds. In a fund raising drive coordinated by the Manufacturers' Association of Northwest Pennsylvania, the local business community contributed \$750,000 toward the cost of building and equipping the facility.

The original design of the building was for manufacturing-oriented training. Over its history, the Skill Center has included the following technical training laboratories: Forging, precision machining, tool & die, industrial maintenance, welding and injection molding. The intended audience for the training conducted at the Skill Center has been adults and out-of-school youth. The training was available primarily on a full-time basis; however, the facility has been used extensively for part-time or customized technical training. It was very common for the facility to be used for 16 hours a day or more.

The use of the laboratories has changed somewhat over the years. The welding laboratory moved from its original location to a redesigned and renovated location within the building. The injection molding program has "shared" space in several of the laboratories, but never in a laboratory of its own.

In 1999, the Skill Center received an upgrade in the lighting and converted a fuel gas heating system to a natural gas heating system. The project was completed under an energy performance contract with Siemens. The project cost \$267,400 with a 10-year repayment schedule.

After a severe decline in the adult, fulltime enrollment, the Skill Center fulltime programs were discontinued and the facility was essentially closed down in 2000. The adult education division of the Erie County Technical School did use the facility sparingly for part-time evening classes in its schedule.

During the 2000-2001 school year, the Erie County Technical School used the facility for its Plastics Technologies program due to equipment requirements (size, utilities, etc.). In the 2001-2002 school year, the technical school added two new high school programs (Tourism

and Hospitality Management and Networking Technologies) and located them at the Skill Center with the Plastics Technologies program. Due to budget constraints and the high cost of facility operation, the three high school programs were moved to the high school during the 2002-2003 school year and the building sat vacant.

In 2003-2004, the building was leased to the Millcreek Township School District for use by its North Coast School, an alternative education program for high school students. The following year, 2004-2005, the participating school districts, through the Intermediate Unit leased the entire facility and used the classrooms for their Erie County Academy of Collegiate and Advanced Studies. The ECACAS offers collegiate credit classes for high school students.

Through its recent history, the Skill Center has received attention as the potential sight for other programs. The Joint Operating Committee considered renovating the classrooms and offices for additional use by the high school program. The Intermediate Unit considered renovating a portion of the building and converting some of the laboratory space into office space. Additionally, the Intermediate Unit also considered transforming some of the laboratory and classroom space into special education classrooms and a transition center.

Current Facilities Description

1. Land

The property encompasses 146 acres. The parcel is located at the "Five Points" intersection (Oliver, Hamot, and Flower Roads) and covers 146 acres. Both the Erie County Technical School and the Regional Occupational Skill Center are situated on this parcel.

2. Buildings

The Erie County Technical School was built in 1968. The original facility covered 93,000 sq. ft. and housed 16 vocational-technical programs. This building serves as the career and technical education department for 11 participating schools districts and serves students in grades 10, 11 and 12. It also serves the career and technical education needs for adults on a part-time, evening classes basis.

The Regional Occupational Skill Center was built in 1976. The two-story design includes four large-bay manufacturing laboratories and seven classrooms that can be subdivided into ten classrooms and covers 41,000 sq. ft. Three of the four laboratories measure approximately 5,000 sq. ft. each. The fourth laboratory measures approximately 11,000 sq. ft. Each of the laboratories has office and storage space. The classrooms range in size from 800 sq. ft. to 400 sq. ft. when subdivided. All of the classrooms are located on the second floor.

The facility also has a number of general-purpose offices and meeting rooms on the first floor. There is also a centrally located vending area and restrooms on the first floor. Two banks of lockers flank the vending/restroom area. The second floor also has a set of restrooms.

Access to the second floor is available through two staircases, one in the front of the building, and the other at the rear of the building. There is also an elevator located at the front of the building near the vending area.

Summary

Through its various programs and services, the Erie County Technical School touches the lives of over 1,800 youth and adults each year. Over its 41-year history it has provided first-rate career and educational opportunities to the Erie community. After years of working in spaces and under conditions that are 'not quite right,' operating programs in make-shift conditions, being unable to 'do things' in a different and better way, and unable to offer new programs and services—all due to space and facility limitations; the time has arrived for a facility improvement. The time and need have come to reposition the technical school to ensure it provides even better programs and services for the next 40 years.

By its many virtues, ECTS could do more to meet the needs of the community. But without a significant improvement in the facilities, ECTS will do little more than it does now. At a time when technical careers are in a position to provide outstanding opportunities for the workforce of tomorrow, it is time to ensure and expand the capability of the Erie County Technical School to play its role in career preparation and workforce development. There are but a few, if any, public venues in Erie County that teach middle school youth, high school students, college-bound students, and adults seeking technical training. The Erie County Technical School does that now, but it could do more.

This feasibility study calls on the 11 participating school districts, in particular the superintendents and school board members, to embrace the study's recommendations and support a plan to renovate and expand the Erie County Technical School.

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HRL & C Review

Introduction

The following survey and study was conducted to investigate the current condition of the Erie County Technical School and provide schematic plans and conceptual ideas for possible expansion. The study has been developed to assist the Erie County Technical School Operating Committee, Administration, Faculty and Community in the decision making process regarding the future utilization and arrangement of the educational facilities. The goal is to provide ways to make the building more efficient, reduce operating and maintenance costs and to make it flexible for its users.

The existing facilities have been reviewed by Architects and Engineers to determine their current condition. The facilities have also been examined to determine compliance with the most current codes in regards to ADA, heating, ventilation and lighting. Particular attention has been paid to energy efficiency due to current economic climate and the anticipated increase in utility costs.

Proposed plans contained in this document are schematic and show space allocations necessary for potential renovations that have been identified by the Administration, Faculty and Educational Consultant.

Building and Site

The existing one story masonry building was originally constructed in 1968. Renovations and additions occurred in 1986 to the Auto Mechanics Program. In 1992 the entire facility was renovated with new additions to the Auto Body Repair, Warehousing and Building Trades Programs. This project improved the parking/road infrastructure and included updates to the existing heating, plumbing and electrical systems. A HVAC Improvement project was implemented in 1999 that included the mechanical upgrades to the Culinary Arts, Office Area and the south east wing of the school.

The two-story Regional Skill Center was originally constructed in 1976 and has not had any major structural changes since it was built. Only minor modifications have been made to existing spaces to accommodate changes in educational programs.

Site Conditions

The level site on Oliver Road in Summit Township, Erie County, contains approximately 146 acres. The original site development included bituminous drives, parking areas, concrete sidewalks and play areas. Parking and drives were extended and enlarged in 1976 when the Regional Skill Center was built.

The existing drive to the East should be increased in width to accommodate buses and the paving in the rear parking lot should be replaced.

Current Building Size

Erie County Technical School (1977)
Regional Skill Center (1987)

110,000 s.f.
43,000 s.f.

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Structure

The original one-story, steel frame is built on concrete spread footings with a 4" thick concrete floor slab on grade. The 1 1/2" deep steel roof deck rests on steel joists approximately 72" on center. Walls are constructed of face brick and a concrete block backup. The overall structure system is in good condition.

Roof

Sections of the existing roof have been replaced over the years with an EPDM membrane and should have an average insulated R value of 21. The majority (90%) of the existing roof is out of warranty and it is suggested that if a renovation project is pursued it should be replaced with a 20-30 year roof. It is recommended that a roof hatch be added for roof access as well as tapered insulation and several more roof drains and scuppers to comply with the latest code.

Exterior Walls

The existing walls are in good condition and are constructed of face brick, concrete block and 2" thick insulation in the cavity. The existing metal fascia/soffit system, original to the building, is in fair to poor condition and needs to be replaced. Single pane exterior glass in the main corridors should be replaced with dual pane glass or replaced with an insulated panels to improve the exterior walls thermal value. The base of the existing single pane glass in the main corridors should be increased to prevent water/air infiltration as well as prevent any safety issues with the height.

Windows and Doors

The existing dual glazed windows are in good condition but many of the seals have failed and caused condensation in between the panes of glass. The existing windows should be replaced with more energy efficient windows. New windows with dual or triple pane glass with low E, argon filled panels should be considered to improve energy efficiency and comfort.

The entrances have existing doors and frames that are in fair condition. The existing doors and frames should be replaced with new and comply with current ADA requirements.

The interior doors and frames should be replaced with recessed openings to prevent doors from opening into areas of egress and of the proper width to comply with the most recent Code.

Building Organization

The building contains approximately 110,000 square feet and spatial organization is fair. Quiet areas are separated from noisy spaces but related activities need better grouping and public areas require improved supervision and monitoring. The building currently has classrooms, laboratories, one cafeteria and kitchen, a faculty room and three administrative areas.

The rooms used for math and theory classrooms were originally constructed as classrooms. Typical classrooms improvements are needed in particular new lighting, HVAC, ceilings, acoustics, doors, hardware, marker boards, smart boards, painting and floor finishes.

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Code Compliance

Although the existing school was code compliant when constructed, Code Compliance may be an issue if significant renovations and additions are made.

Pennsylvania and Summit Township requires that construction now be in conformance with the 2006 International Building Code. Under this Code, the present Occupancy Classification is considered an E Occupancy.

If a substantial renovation and/or addition is performed in the near future, the building must be in compliance with the 2006 International Building Code. Labor and Industry in Harrisburg would perform all of the necessary reviews.

If a renovation or addition is proposed, the storm water requirements of Summit Township will need to be reviewed. A Land Development Plan and Storm Water Management Plan would need to be submitted to the township.

ADA Summary

The route from the parking lot to the main entrance is accessible and accessible parking spaces are available. Some of the existing accessible parking spaces need to be revised to comply with the latest ADA Codes.

The interior route is also accessible and there are not any issues with stairs or elevators. Doors should be replaced with the proper width and appropriate hardware to meet ADA guidelines. New signage with Braille would be required to meet ADA guidelines. Toilet rooms would need to be revised to provide the proper turning radius and grab bars.

Energy Efficiency

A high performance school is energy efficient and environmentally friendly. These high performance features can positively impact the educational environment with "hands on" teaching tools and exposed systems. This would allow students to interact with their building environment and to provide knowledge for their own homes, businesses and careers.

Areas to be addressed would be daylighting, landscape, water conservation, energy efficient building shell, electrical systems, mechanical systems, environmentally friendly building products, indoor air quality, commissioning, energy education, recycling and waste management.

At a minimum, the LEED (Leadership in Energy and Environmental Design) checklist should be used as a guide to design a high performance educational facility. New codes dictate energy efficiency but following the LEED requirements would help take it a step further.

E C T S

Tower Engineering Review

Project Name: **Erie County Technical School**
Client: Hallgren Loop Restifo & Coughlin Architects
Date of Report: October 26, 2009

Subject: EXISTING BUILDINGS MECHANICAL REVIEW AND RECOMMENDATIONS

HVAC (Erie County Technical School): Currently in the administration office suite, the rooms have self-contained DX cooling and hot water heating packaged terminal air conditioner (PTAC) units. These units are noisy and cause overheating in the rooms, access to the units is limited and is difficult to maintain. A central air-handling unit (AHU) provides conditioning to the corridors and interior areas.

The main entrance is plagued with both a high solar load and wintertime weather that that collects snow. Both these issues are compounded by the fact that three groups of students enter and leave throughout the day and night. The Cafeteria is mechanically cooled. The kitchen appears to be adequately conditioned. Two original make up air (MUA) units provide make up air to the cafeteria. A Carrier AHU was installed in 1994. Kitchen hood duct needs some touch up welding. Student services needs a new DX cooling rooftop unit (RTU). The space should be heated with duct mounted hot water coil(s), because the owner does not want hot water on the roof.

Areas used for night classes need to have HVAC zoning to better condition just the spaces needed. Because the amount of classes and time vary, and that most classes have a specific location, decentralized conditioning in future renovations will serve these areas best. This will allow areas not used to be put in unoccupied mode to save energy. Use of CO2 monitors and occupancy sensors can automatically decrease HVAC operation during occupied mode. The DDC system can also be manually scheduled to put spaces in unoccupied mode per the semester's layout. A Johnson Controls Metasys system has been overlaid on this building with new controls covered by this system. Existing pneumatic controls control portions of the building.

The chiller installed in 1992 serving the center of the building has two out of four compressors that do not work. The spaces being served are the cafeteria, cosmetology and other core areas.

The theory room that is part of the welding classroom needs to be mechanically cooled to allow a better desk time educational experience. The welding collection exhaust fans in the shop area need to be outside or in a separate room to reduce noise in the welding classroom and allow the instructors to talk to the students. Some of the booths sizes are small. The welding machine needs to be away from entrance of booth to allow free passage. Some of the welders are out of the way because they were placed up on a shelf near the booth. This has been working out fine.

Corridors and Hallways are heating only. The Computer lab HVAC units linked to science 37. The two units are not working well together. Building Trades and construction room 43 have a dust collector system that wastes conditioned air to exterior.

The separate building that is off the building trades and construction room does not appear to have much heat but appears to be working for the intended purpose.

Masonry area: The existing hood at the block cleaning and masonry prep area needs to be replaced with an exhaust wall behind this location. This would pull the exhaust away from the face of students, rather than up past their face. Consideration should be given to renovating this system to see if the air can be filtered and re-circulate back into the area to save on conditioning costs.

Drafting covers two rooms with separate AHUs. The rooms are separately cooled. Auto Body Lab is similar to the welding area; the theory room here has no mechanical cooling. Consideration for cooling should be a part of future renovations. Auto Mechanic lab has a CO vehicle exhaust system. The new theory room has mechanical cooling unit on roof. RTU is gas heat with DX cooling. Two AHUs both provide cooling for the graphics room. The room gets a lots of sun.

Expected Life: An overall expected service life for the HVAC systems is hard to arrive at because some of the systems have been changed out over time to fit the needs of the educational program. All the original equipment remaining needs to be renovated because it has passed its useful service life. The central chiller system, Student Services RTU, and office PTAC unit need replaced or the affected HVAC systems redesigned toward another types of HVAC systems.

Recommendations: The building HVAC systems have been maintained very well over the years. The major issue facing the facility is keeping the HVAC systems upgraded to serve the ever-changing programs and services that the school provides. The chiller will need to either be serviced to replace two compressors, replaced in whole or the spaces currently served, handled by new HVAC systems. We support the use of more decentralized systems for all the areas that can see after hours activities. Because these programs don't always fill the complete school, unoccupied areas can go into night setback mode and save energy. Any central plant equipment that serves these terminal systems needs to have variable control to provide only the conditioning needed. The use of CO₂ monitors and occupancy sensors can decrease energy use during occupied modes. Options to replace the PTAC units in the administration area should be considered to provide a better work environment. If replacement units cannot be selected that will provide acceptable performance, a ducted systems should be designed for that area. The main entrance solar load will need to be closely reviewed. Supplemental cooling capabilities or architectural and or landscape features should be provided to maintain space during heavy solar load. Consideration of hydronic snowmelt should be included in any renovation project to provide safer travel at higher traffic walkways during the winter. Hydronic snowmelt provides labor free and chemical free clear sidewalks thought-out the day.

HVAC (Regional Skill Center): The HVAC system consists of components installed as part of the building's original 1977 construction as well as replacement components installed in 1999 as part of a performance contract.

The original (1977) HVAC system consisted of one rooftop multi-zone unit (AC-1) and six suspended heating and ventilating (H&V) units. AC-1 had integral cooling capability and provided heating through an oil-fired burner. This unit was located above the Industrial Maintenance shop and served the First Floor offices/entry as well as Second Floor classrooms and conference rooms. As a multi-zone unit, this unit has individual supply ducts that extend to each room having independent temperature control. The H&V units were originally suspended from the roof structure and provided heating and ventilation to the high-bay portions of the building as well as miscellaneous interior portions of the First Floor.

In 1998, five of the H&V units were removed and replaced with Cambridge direct-fired makeup air units as part of a Siemens performance contract. In addition, the original multizone unit (AC-1) was replaced with a new Carrier multi-zone unit having characteristics similar to the original unit.

The westerly facing classroom 215 has an exterior wall of glazing and is prone to overheating from the solar load.

Code Violations: Based upon the cooling/heating capability of the existing multi-zone unit (AC-1), it does not appear that the system was designed to introduce quantities of outside air sufficient to meet current code requirements.

Comparison to Current School Standards: With the exception of the limited areas served by multi-zone unit AC-1, the HVAC systems serving the remaining portions of the building lack cooling capability. Furthermore, these units lack the airflow capability to provide "free cooling" at times when the outdoor air temperatures are cool. Finally, the H&V units are controlled with a single thermostat (per unit).

Recommendations: Replace the existing HVAC system in its entirety to fit the planned usage. Install a Johnson Controls direct digital control (DDC) system that ties in with the existing DDC systems in the adjacent building. Given their age, the Regional Skill Center's mechanical systems are in good shape. For the most part, the existing systems are functional. To work to resolve the overheating of classroom 215. This area should be commissioned and balanced to ensure the original design intent is being met. If this does not resolve the issues, rebalancing of the Carrier multizone unit AC#1, and decreasing supply air from other part of the building that have excess airflow including corridors may provide

more cooling for room 215. Use of the installed occupancy sensors that control lighting to also setback the HVAC system per zone when spaces are unoccupied could provide more capacity for classroom 215.

PLUMBING & FIRE PROTECTION: The domestic water service entrance upon site visit seemed to be leaking. There is an existing reduced pressure backflow device. The gas fired domestic hot water system appears in good condition. Existing plumbing fixtures consist of wall-hung water closet with flush valve, wall-hung urinal with flush valve, wall-hung lavatory with center set faucet. The fixtures are in good to serviceable condition. The fixtures in the shop area typically are not ADA compliant. The gang toilet rooms do have ADA compliant fixtures in them. The wash fountains in the individual shops range in good to condition, to barely operable. This is dependant on the shops individual use of the fountain. The Building is currently not protected throughout by a fire protection sprinkler system. The auto body paint spray booth has a limited area system. The system connects to the yard main and comes in near the booth and serves the riser. There is currently natural gas service provided to this building. Storm sewers are located on property. Roof drains go down below grade to storm system. Storm inlets and area drains are located on the property. Sanitary sewers are located on property. There is currently a sewage treatment plant on-site. The kitchen does not have a grease trap and depending on the amount of renovation, one should be added. The hair wash sinks do not have hair traps.

Recommendations: Domestic water service leaks should be repaired.



Project Name:	Existing Erie County Technical School located at 8500 Oliver Road, Erie, PA
Tower Project Number:	A8097
Client:	Hallgren Loop Restifo & Coughlin Architects
Date of Building Survey:	September 5, 2008
Date of Report:	October 16, 2008
Author:	John C. West Jr., PE – Electrical Project Manager

Subject:	EXISTING BUILDING REVIEW AND RECOMMENDATIONS – ELECTRICAL
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POWER DISTRIBUTION

Expected Life

The average life of switchboards, transformers, panelboards, and wiring is approximately 40 years. Almost all of the distribution equipment in this building has surpassed its useful life. The only exception to this is the newer panelboards installed during the renovations in 1993. The 1967 vintage switchboard and panelboards are manufactured by Square D, which still has parts available for these pieces of equipment if needed (circuit breakers, etc.).

Recommendations

- Due to the age of almost all of the branch distribution equipment, except the panelboards installed during the 1993 renovation, it is recommended that all the distribution equipment be replaced with new as part of any renovation project. This would include upgrading the main switchboard to a slightly higher amp rating. Also, placing the switchboard in a separate room from the main boiler room will provide a cleaner environment for the equipment and restrict access to the equipment.
- Revising the electrical distribution in the building to create several sub-distribution points would be advised. These sub-distribution points would include a larger 480 volt panelboard with one larger transformer and one 208 volt distribution paneboard. The 208 volt distribution panelboard would then feed 208 volt branch panelboards in the lab spaces and classrooms. This type of distribution system would greatly decrease the number of transformers in the building. Decreasing the number of transformers will also help the Owner's overall electric consumption, since all transformers have an inherent loss, approximately 3% of their KVA rating.
- The existing secondary service feeders should be replaced with new as part of any renovation project.
- Most branch circuiting to light fixtures, receptacles, and HVAC equipment should not need to be replaced because it is only 15 years old, unless the architectural layout of a major renovation required that it be replaced.

EMERGENCY LIGHTING AND POWER SYSTEMS

Expected Life

The emergency generator, which was installed in the 1993, is still functioning and could continue to operate for several more years with proper maintenance.

Recommendations

- At a minimum, the natural gas emergency generator should be removed and relocated to a dedicated space to meet the requirements of NFPA 110.
- If a larger renovation project is undertaken, the Owner may prefer to include additional non-essential emergency loads that would cause the existing 15KW emergency generator to become overloaded. In this case, a larger emergency generator would be required. An outdoor unit would prevent the need to create a space inside the building for this equipment.

LIGHTING SYSTEMS

Expected Life

Most light fixtures can be expected to have a life span of approximately 20 years. Almost all the light fixtures are within this time frame however the energy efficiency of most of the fixtures is questionable.

Recommendations

- Because almost all fluorescent light fixtures in the building use T12 lamps, the replacement of the light fixtures in all areas should be considered in order to use more efficient fixtures with T8 or T5 lamps. The cost of removing the existing lamps and ballast in each light fixture to try to reuse the light fixture is usually not cost effective. Even though the light fixtures are only 15 years old, the cost of a new light fixture with new T8 lamps and electronic ballast vs. retrofitting the old housing is usually the same when labor is factored in.
- For a major renovation project, new lighting controls will need to be provided throughout the building in order to meet IECC requirements.

FIRE ALARM, INTERCOM, AND CLOCK SYSTEMS

Recommendations

- For a major renovation project, the fire alarm system should be replaced because most fire alarm system manufactures do not stock parts for fire alarm systems from a previous generation of equipment for too long. Fire alarm system devices should also be added to meet coverage patterns that are recommended by the system manufactures.
- The intercom and clock systems are not required to be replaced at this time if the systems are still working. But, if the Owner is experiencing any issues with these systems, it may be prudent to upgrade these systems to newer technology, such as IP addressed intercom systems and wireless clock systems.



Project Name:	Existing Regional Skill Center located at 8500 Oliver Road, Erie, PA
Tower Project Number:	A8097
Client:	Hallgren Loop Restifo & Coughlin Architects
Date of Building Survey:	September 5, 2008
Date of Report:	October 16, 2008
Author:	John C. West Jr., PE – Electrical Project Manager

Subject:	EXISTING BUILDING REVIEW AND RECOMMENDATIONS – ELECTRICAL
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POWER DISTRIBUTION

Expected Life

The average life of switchboards, transformers, panelboards, and wiring is approximately 40 years. Almost all of the distribution equipment in this building is still within the limits of its useful life. The only exception to this is the newer panelboards installed during recent localized renovations. The 1967 vintage switchboard and panelboards are manufactured by General Electric, which still has parts available for these pieces of equipment if needed (circuit breakers, etc.).

Recommendations

- Due to the age of almost all of the branch distribution equipment, except any panelboard installed during a recent renovation, it is recommended that all the distribution equipment be replaced with new as part of any renovation project. This would include replacing the main switchboard at the same amp rating. Also, relocating the main switchboard to a room that does not include the water heaters would be prudent and would restrict access to the equipment.
- Typical classroom design recommends that a minimum of eight (8) general-use duplex receptacles be located in each typical classrooms, two per wall (assuming four walls). In addition to the above-fore-mentioned receptacles, receptacles are required for the personal computers and the television. Additional receptacles may be required in the second floor classroom spaces to accommodate the Owner's needs.
- The existing secondary service feeders should be replaced with new as part of any renovation project.
- Most branch circuiting to light fixtures, receptacles, and HVAC equipment is original to the 1976 construction of the building and should be replaced. This would be especially true if the architectural layout of a major renovation required that it be replaced.

EMERGENCY LIGHTING AND POWER SYSTEMS

Expected Life

The battery units have an expected 10-year battery life. Based on the time of construction of this building, these battery lighting units have probably been replaced at some point already.

Recommendations

- At a minimum, existing emergency battery units and exit signs should be tested and malfunctioning units should be replaced.
- One option is to remove all the unit battery equipment and provide and a central battery inverter cabinet could be considered. The advantage to a central battery inverter cabinet is that when the Owner has to test all the battery equipment in the building to meet local ordinances, only one button has be pushed rather going around to each piece of battery powered equipment.
- New battery-powered exit signs should be installed to meet the requirements of IBC and any new architectural floor plans.
- In the event the Owner would prefer to include loads other than lighting, it would be necessary to install an emergency generator along with automatic transfer switches to transfer power from the normal utility source to the emergency source.

LIGHTING SYSTEMS

Expected Life

Most light fixtures can be expected to have a life span of approximately 20 years. Almost all of the light fixtures have exceeded this life span, even though the lamps and ballasts have been replaced in the past 10 years in most of the fluorescent light fixtures.

Recommendations

- Because almost all of the fluorescent light fixtures in the building are original, the replacement of the light fixtures in all areas should be considered. New light fixtures would utilize more efficient fixtures with T8 or T5 lamps. Because a lamp and ballast retrofit has already been done once, it would not be recommended to perform this action again.
- For a major renovation project, new lighting controls will need to be provided throughout the building in order to meet IECC requirements.

FIRE ALARM, INTERCOM, AND CLOCK SYSTEMS

Recommendations

- For a major renovation project, the fire alarm system should be replaced because most fire alarm system manufactures do not stock parts for fire alarm systems from a previous generation of equipment for too long. Fire alarm system devices should also be added to meet coverage patterns that are recommended by the system manufactures.
- The intercom and clock systems are not required to be replaced at this time if the systems are still working. But, if the Owner is experiencing any issues with these system, it may be prudent to upgrade these systems to newer technology, such as IP addressed intercom systems and wireless clock systems.



Project Name: Existing **Regional Skill Center** located at
8500 Oliver Road Erie, PA:
Tower Project Number: A8097
Client: Hallgren Restifo Loop & Coughlin Architects
Date of Building Survey: September 5, 2008
Date of Report: October 16, 2008
Author:

**Subject: EXISTING BUILDING REVIEW AND RECOMMENDATIONS –
PLUMBING and FIRE PROTECTION**

Regional Skill Center

- **Existing Water Service**

The domestic water service entrance upon site visit seemed to be leaking. There was water lying on the floor below the service.

The building has two existing water services. One is at a higher pressure but, from what building maintenance related, the pressure fluctuates, so the building was removed from this service. The water service the building is using now is at a lower pressure. But this is adequate to operate the building. The domestic water pressure booster system has been removed from service and sits in the unused in the mechanical room.

There is an existing reduced pressure backflow device on the service.

- **Domestic Hot water**

The system is served by 3 gas fired water heaters that seem to be in good working condition.

- **Plumbing Fixtures**

Existing plumbing fixtures consist of wall-hung water closet with flush valve, wall-hung urinal with flush valve, wall-hung lavatory with center set faucet. The fixtures are in good to serviceable condition. The fixtures in the shop area typically are not ADA compliant. The gang toilet rooms do have ADA compliant fixtures in them. The wash fountains in the individual shops range in good to condition, to barely operable. This is dependant on the shops individual use of the fountain.

- **Fire Protection**

The Building is currently not protected throughout by a sprinkler system. The auto body paint spray booth has a limited area system. The system connects to the yard main and comes in near the booth and serves the riser.

- **Gas System**

There is currently gas service provided to this building.

- **Storm System**

Storm sewers are located on property. Roof drains go down below grade to storm system. Storm inlets and area drains are located on the property.

- **Sanitary System**

Sanitary sewers are located on property. There is currently a sewage treatment plant on-site. Cleanouts are located throughout the building.

There are floor drains located throughout the building.

The kitchen does not have a grease trap and depending on the amount of renovation, one should be added.

The hair wash sinks do not have hair traps.

- **Recommendations**

Domestic water service: The leaks in the water service should be repaired.

Domestic Hot Water System: No action required.

If additional gas equipment is required, then it is recommended that the existing gas system be evaluated to determine if the existing system is capable of handling the additional demand.

Project Name:	Erie County Vocational Technical School
Tower Project Number:	A8097
Client:	Hallgren, Loop, Restifo & Coughlin Architects
Author:	James N. Kosinski, P.E.

Subject: GEOTHERMAL HVAC SYSTEM ADVANTAGES/DISADVANTAGES

Tower Engineering has provided engineering services for many past (and current) projects where a geothermal HVAC system was designed and installed. Most recently, we worked with HRLC in renovating/expanding the existing Millcreek Twp School District's JS Wilson Middle School. The JS Wilson project was designed to incorporate many sustainable features, including an efficient geothermal HVAC system.

To determine if the increased construction costs associated with a geothermal HVAC system would be justified, detailed energy calculations were performed in the JS Wilson project's early (conceptual and schematic) phases. These calculations indicated that the payback period would be attractive compared to conventional HVAC systems. At this time, there are a number of state and federal incentives that may be applicable. We recommend that consideration be given to the application of a geothermal HVAC system to any substantial renovation project at the Erie County Vocational Technical School.

A geothermal HVAC system is very similar to a water-source heat pump system (detailed description included in the Skill Center report). In lieu of including a central gas-fired boiler (for heat addition) and fluid cooler (for heat rejection), a geothermal system replaces these components with a ground-coupled heat exchanger.

A geothermal HVAC system makes use of multiple water-source heat pumps (WSHP) that would be installed throughout the building. Each WSHP uses a common closed loop condenser water piping network as the heat source when in the heating mode and as the heat sink when heat pumps operate in the cooling mode. In a building with various exposures, some units may operate in a cooling cycle while other units may simultaneously operate in the heating cycle. The "heating" units are removing heat from the water loop while the "cooling" units are adding heat.

Over time, predominant operation in either a heating or cooling mode will cause the loop water temperatures to drop (heating mode) or rise (cooling mode). In a conventional water-source heat pump system, the central boilers and fluid coolers maintain loop temperatures within tolerance limits. In a geothermal system, a series of vertical boreholes replaces central plant equipment (chillers, boilers, fluid coolers). The series of boreholes (ground coupled heat exchanger) is used to provide efficient means to maintain loop temperatures.

HVAC for each room having a unique heat gain/loss profile would be provided by a vertical water-source heat pump, providing for individual temperature control. Ventilation would be provided by a dedicated outside air system.

Advantages (compared to conventional system):

- Low energy use due to ground-coupled heat exchanger and heat recovery
- Good system reliability. If a compressor in a heat pump fails, the entire system does not shut down. The primary circulating pump is provided with a standby pump.
- Central cooling plant and heating plant not required.
- Architectural Impact – No mechanical room or outdoor space for heating plant, cooling plant, chiller and/or cooling tower.

Disadvantages (compared to conventional system):

- Higher construction cost compared to conventional system.
- Space required for ground-coupled heat exchanger

ECTS

Administration, Faculty & Superintendent Input

Meeting with Superintendents

Miscellaneous Comments

- Technical School with students of all abilities –both gifted and students with limitations
- Goal is to acquire a job or continue onto college
- Existing building is too small
- Use the existing Regional Skill Center to remodel or connect both buildings
- Appropriate for 21st century
- Provide space for Nano-technology
- Provide space for Bio-technology
- Special needs - instruction in class
- Very comprehensive program
- Design a building that teaches using rain water collection and solar panels
- Create an Industrial Education Park
- Provide educational opportunity
- Provide diversity
- Provide for alternative education, collegiate and transition for special needs
- Provide for flexibility and the future
- Ability to create flexible labs
- Interface between Technical School and Community College
- Flexibility very important and the ability to make changes easily
- Technology of tomorrow
- Access to Community College - morning, afternoon and night
- Earn Associate Degree before leaving high school
- Create link between Community College and school
- Do not duplicate services
- Make use of the existing building to keep expansion economical
- New face on Skill Center
- Build for future?
- Cosmetology needs additional space - cost for equipment, not construction
- Cost to maintain
- Cost of new construction and look at entire campus
- Utilities, cost and on-going maintenance
- Utilize Skill Center
- Connection between Tech School and Community College
- Major Asset to community
- Post secondary purpose
- Connector between two buildings - community use in center
- Foster idea of diversity - central hub around food - all buildings linked with cafeteria in building
- Enclosed connector
- Aesthetics of the Regional Skill Center
- Possibly move administration

ECTS

Meeting with Superintendents - continued

Miscellaneous Comments

- Community library?
- Connection to Erie County
- Community College, State Police, and 911 - design wing for forensic technology and security
- Full day programs?
- Address health and PE, build gymnasium?
- Is it possible to serve all students?
- Many students want to be here all day and for the year
- Comprehensive program
- ECTS it's own entity?
- Community College - 100% use of facility for summer and night usage
- East/west side location - would students be better served?
- Building capacity for morning, afternoon and night students
- Facility use needs to be answered
- Solicit EMTA to increase travel to ECTS from east side
- Adult education classes popular
- School gets a lot of traffic
- Offerings at night
- Internship credits - in 21st century
- A comprehensive Vo-Tech
- 15 students per classroom - smaller classes would be beneficial
- Renovate entire campus
- Need for grass roots input and survey
- Industry study
- Vision for this facility
- Uniquely positioned to drive Community College
- Utilize resources

ECTS

Interviews with Faculty

Electrical Engineering

- Concern for size and safety
- Electric supply and distribution - turn off electricity at panelboard
- Larger work area or redesign
- New tables are large
- No organization now, need full view of students
- Isolation of classroom/classroom with glass
- Computer work - generate diagrams
- 4 students at computer at one time
- More academic classes would be desirable
- Lab program currently insufficient

Facility Maintenance

- Sound proofing between two classrooms
- HVAC trainer equipment in room now
- Uses Smartboard for digital instruction
- LCD Projector with DVD ceiling mount - free up floor space
- Air conditioning - room gets hot (theory room)
- Start an HVAC program for more classes - contractor, Builders Association, etc.
- HVAC program - Add space, extension on back of building as big as recent could spark community interest.

Automotive Technology

- Lower lab needs new lighting
- Voice amplification - noisy area
- Stadium seating (portable risers) would be preferred
- Upper lab - area for trainers set up - lighting, brakes, etc. - break up into boards
- Disassembly of engines - flexible, move benches in and out
- Smartboard and LCD projector needed
- Theory Room too small (upper room in particular)
- Need air conditioning - lower area has air conditioning, upper does not
- Remove wall between upper and lower classrooms
- Improve sight lines - Need vision from one side to another
- Class fits local labor market
- Could be expanded - doors from one room to the next
- Need heavy truck program - CDL
- Equipment Operator Program - shovel, backhoe include with heavy diesel program
- Class open to adults - constant need
- Theory Room too small for 26 students - rearrange or redesign
- Fit with local needs - changing as requested
- Marketing

ECTS

Math

- Own classroom with computer access
- Need dedicated space
- Sharing classrooms does not work
- Every door needs to be recessed
- Need space for alternate education
- Need more technology - Smartboards
- Only two mobile labs - need more equipment

Metal Fabrication

- Lighting okay, acoustics need to be addressed
- Relocating exhaust on roof would help with acoustics
- All exhaust needs to be turned off now to have students hear
- Noise level too high inside room
- Fits local program
- Need larger booths and a larger area, 5'-0" or bigger for each booth
- Welding at back of both for cleaning purposes or off floor for sweeping underneath
- Project Technical School - energy independent, show community on cutting edge
- Construction by students, build as part of program
- Plasma cutter for interesting projects by students

Networking Technologies

- Small room, like theory layout, classroom oriented - focus on whiteboard
- Need larger lab - very small
- Need server racks
- Need storage, needs to be accessible
- Possible 2-3 year program
- Develop over 3 years
- Align well at national level, pay low locally
- Plenty of jobs at national level
- Hands on activities and labs
- Expand program to more than 1 year
- Advertise classes in labs
- Make students aware of other trades
- Offer more programs for diversity
- Marketing

ECTS

Construction Trades

- Addition is nice
- Theory room too small - 24 chairs and 47 students
- Dust is an issue - cleaning
- Market - students could be valuable to local trades
- Possible second classroom
- Two teacher lab
- 3 - 5 life skills students
- Bigger day with three levels
- Lighted sign out front - scrolling sign and upcoming events. Emphasis on projects.
- Card entry system - go in thru one door
- Toilet Room in lab, urinal and toilet, no sink - need sink desperately
- Coed labs
- Wish list- Grass area - 50 - 60 wide, would like it concrete, hard flat surface to work on
- Security camera upgrade
- Walk is tedious, need access directly to lab
- Works fine - additional space not needed
- Electrical breakers currently located in ceiling - difficult to access - need to be lockable
- Fits with economy
- Adequate budget and tools

Tool and Die

- Equipment - one small wire EDM
- Media cabinet built in classroom
- New projector - needs (2500 +) lumens for LCD projector
- Total of eight computers would be great
- Shop air - maintenance has control; would be nice for individual control
- Turn on/off with computer - to turn on
- Better air compressor - permanent and turn ball valve to have energized in that room only
- (3) vertical mills - lighting an issue
- (2) lathes - smart board
- (1) surface grinder
- Physical space okay
- 1/3 room dedicated to plastics

ECTS

Drafting and Design

- Room functional, good size and shape okay
- Lighting, better lab in both rooms
- Smart board would help
- Furniture okay, furniture moveable - cleaning is difficult
- Student lounge - tie in with kitchen and wi-fi connection
- Break time - possible courtyard, need comfortable space
- Flat screens thru out building - broadcast cable programs, projects on and info on classes
- Built in tables? Moveable
- Vision is required for whole room
- Lots of storage - existing storage good
- Power poles - if they could be removed it would be nice
- Space is good
- Display for work - 3D modeler, in and out of classroom (display case) and market okay
- Computer room too bright
- Individual lights - telescoping necks
- Bigger monitors or maybe two monitors

Computer Information Systems

- Configuration - horseshoe works well
- Configuration - needs to be redesigned
- Room is ideal for vision
- Lighting is terrible - way too dark
- Add carpeting
- Windows or day lighting - glass in corridors to classrooms
- Teaching Technology
- Fit economy
- Smartboards
- Need for cable access - record/show tech
- Need separate server
- Concern with carpet
- Better job of recruiting and advertising - hire advertising agency
- Dedicated theory room for math

Electronics

- Solid future
- Training scope - bench is less and less
- Working with machines in an environment
- Less technical with computers
- More machine tech skills
- Lighting needs addressed
- Full vision of room with U shape

ECTS

- Backs to teachers, students around perimeter
- Need lighting along perimeter
- Carpeted and quiet area - eliminate chemical storage
- Instrumentation in center - robot in middle of room - goes in circular
- Opportunity to teach
- Quiet area, central and robot area - need vision of entire space
- More natural lighting
- Lack of computers - need computer space
- CD based education
- Fit needs of local economy
- More practical skills with mock up machine, flow rate meter, etc.
- Apprenticeship programs coming back, in-house, usable hands on skill, could utilize for companies.
- Curriculum good, need equipment, better serve adults thru apprenticeship
- Need equipment that can be seen by teacher
- More windows into classroom from corridor
- Shift from theory and bench tech
- 150 acres for solar, geothermal and wind

Tourism and Hospitality Management

- Unique situation - size of room
- Risers; theater seating would be preferred
- Smartboard would be useful
- Lab is at hotel - off-site
- Needs theory room
- It would be nice to have office - secure
- Theory room bigger
- It would be nice to have rest room and storage
- Computers for 15
- Water fountain in classroom

Health Assistant

- Separate theory from other space
- Laundry area with linen storage - wash/dryer
- Locker rooms - female and male - 35 lockers for 40-50 students
- Counter area - kitchen counters - U shaped counter not in theory area
- Equipment storage area - lockable
- Computer area for 15 students
- Quiet area - study area - 6 students
- Visual with glass or group study
- Expand medical program - do not duplicate services of other buildings
- Natatorium - 3 pools in area, CPR and weekly. Lifeguard classes - offer to community - swimming instruction. Lifeguard "closed beaches" not enough lifeguards
- Adult classes - boating

ECTS

Auto Body Repair

- Telephone, portable or bell or light
- Area to lock up toolboxes - sitting around now
- Panel storage - hoods, fenders, deck lids
- Mig welding - strategically located next to paints - need to move - mix and storage.
- Larger office area
- Indoor area similar to paint booth to sand blast (spring and fall) need good weather, can't sand blast in shop - could reclaim sand
- Collision repair - two separate programs, 1. Refinishing/painting and 2. Collision repair - dents/damage
- Virtual paint - system would be state of the art technology

Cosmetology

- Utilize bathroom and shower facility with individual showers - faculty/students
- Utilize wind energy
- State minimum for space
- Need computers - 15 (not as often)
- Need more space
- Whiteboard useless - go back to chalkboard or overhead projector
- Storage areas small and inefficient
- Throughout clinic - power poles stationary and in bad locations
- Increase size of program - additional instructor - growth in skin care
- Training in aesthetics - microderm abrasion - no space to do it now

ECTS

Graphic Communications

- Conversation area for entire school
- Administration/Counselors - in one area
- Need dedicated school entry - hard to find office
- Add school store with books and souvenirs
- Could use more space in lab and office
- Equipment - packaging equipment
- Heat transfer equipment
- Laser engraving
- Letter press and production area
- Need new AV equipment
- Projection - LCD and smart board
- Synchronize computers with teacher
- Climate on issue - VOCS in pressroom - need exhaust
- 22 computers in classroom
- Larger office

Culinary Arts

- Run two different labs, need theory room
- Instruct a culinary class
- Two teaching areas in lab (sitting or standing)
- Lab currently split in two - windows?
- Assembly needs— $\frac{1}{2}$ doing projects and $\frac{1}{2}$ being given instruction
- Areas need more space
- Storage for stand mixers, food processors - in close proximity
- Freezer/cooler okay
- Paper supplies need storage
- Office needs to be bigger
- Place to barbeque and a garden or greenhouse
- Theory room inadequate
- Lockers not good - too small
- Larger dining area - serve lunches, for private meetings and a small area for visitors (maybe in area of greenhouse)
- Three dining rooms total - (including Eagles Nest)
- Rent out space, provide services and real life experience
- Larger area - 2 times size (originally one)
- Larger kitchen, food prep
- Dining/Conference room
- Locker rooms inadequate
- Lockers close to laundry room
- Lockers exit thru laundry room
- Redesign kitchen and lab space
- New, larger dining room, for meetings, two dining areas/conference room
- Possibly divide dining areas

ECTS

Art and Design

- Natural lighting, tile ceiling
- Daylight balance lighting
- Second exit from classroom
- Bathroom in room
- Secure storage - adequate chairs
- 16 static computers - no laptops
- All lockers in classroom
- Access to temperature control - too cold, too hot
- Every lab should have access to fuse boxes
- Larger room
- Separate theory room
- Areas for particular class
- Easel and photo studio area
- Mat cutting and dry mount area
- Desks lower with computer in desk
- Eliminate dark room, part storage
- Sight lines throughout space, would like office and still be able to see students
- Upgrade wiring
- Control lighting - possibly dimmers
- Spray booth needed and better ventilation
- Larger area for storage and lockable portfolio case storage
- Flat screen monitor in lobby to display digital work in lab
- Student lockers - inadequate size - need wider and deeper
- Light colored floor - a wood parquet floor would be better
- Floor is cement - acoustics and standing on tough
- Copier in classroom
- Drinking fountain in classroom - keep students out of hallway
- Visual Communication Area
- Illustration, web design and digital photo
- National Accreditation - advance placement for college credits
- No handicap doors - need push button for automatic access

ECTS

Early Childhood/Graphics

- Need storage space - lockable
- Temperature issues - (usually cold)
- Shortage of computers (4 or 5), more would help in graphics
- Different labs each year
- Construction and EE
- Permanent office needed
- Room for all instructional aids
- Need space to be secure
- Filing cabinets and two drawers now
- Need resource room back with coat closet centrally located
- Need spot for student testing
- Staff lounge is a catch all now - lounge not used as a lounge
- Coat closet to lock up personal items
- Materials for storage in same office area
- Resource Room with computers, testing, supplies, etc.
- Individual control of HVAC systems
- Hot water system needs upgrade
- Private bathroom for faculty
- Cafeteria - front door push button for ADA
- Greenhouse for Culinary Arts and Horticulture
- Faculty space
- Space for aides to do work
- Separate storage area
- Need air conditioning
- Faculty needs window
- Lobby Area - display cases for students work - rotating exhibit - lockable
- Signage out front - electronic message center
- Tie labs together - team teaching
- Windows and daylight great
- Exit to playground nice
- Theory room too small - need windows
- 24 computers
- Location for theory room bad
- Pre-school could increase
- Student prep area within vision of area and hand wash
- Pre-school adequate
- Double size of classroom and add office area
- Theory room next to observation room with windows - right next door
- Update Technology
- Eliminate waiting list by increasing size
- Office in both rooms - pre-school and high school
- Outdoor storage shed for outdoor toys

ECTS

Interviews with Support and Administrative Staff

Co-Op and Business Partnerships

- Classroom grows over course of year (10-70 students)
- Break out rooms
- Contacts with business people
- Must go to Skill Center
- Would be nice to have space in ECTS for meetings
- Cannot see front doors
- Security camera with buzzer system

Co-Op and Placement

- Need paper, notebook storage
- Need places for storage, pamphlets
- Need a conference room
- Interviews for 4 or 5 students, a break out room would help
- A 12 x 14 space
- Space for 4 filing cabinets
- Conference Room with kitchenette would be good
- Record storage - needs to be accessible
- Areas to expand - possible four extra classrooms
- 911 Center wants to work on a program
- Co-Op needs to be enlarged
- Six offices exist now in cubicles
- Need for Co-Ops in community
- A lack of students for Co-Ops
- Cosmetology, Culinary Art and Child Care are desirable programs for students
- Skills necessary for possible second job to earn money for college
- Attract students to less desirable classes
- Advertising of classes within school for student interest
- Students only have three choices, would be nice if they have more options
- Visitations by students for class interest - let them look and see
- Add more student display
- Rolling job notices in lobby, with digital screen
- Add a food court or café to lobby
- Possible to serve public thru cafeteria - networking for community/marketing

ECTS

Adult Education

- Outgrown office
- Two employees now
- Finger printing done in office
- Good location at front of the school
- Need more room, seating, finger printing area
- Could be more efficient
- Likes office location - near front
- Lacks classroom to conduct workshops - go off campus now

Office

- Office has pleasant atmosphere
- Need place for six students
- ISS - students everywhere - needs to be addressed
- Need new instructors mailboxes
- Relocate mailboxes in office to be more accessible
- Better set up for student files and records
- Need small library/resource center connected to office
- Need larger counter at main office
- Glass to corridor - safety
- Principal, Guidance and Conference Room should be sound proofed
- Redesign office to be C-shaped for security and privacy
- Need more storage space
- Separate server room
- Incorporate files with storage
- Need visual of back parking lot and doors
- Groups that come in at night need space - no place for them
- Possible flex space for four classrooms with operable walls

ECTS

Business Office

- Better landscaping
- If a horticulture class was developed- landscaping could be done by students
- Like easy access for students
- In good location
- Office a good design with everyone together
- Toilet Room ventilation needs addressed
- Would like to add area, need more space
- High School Office is busy, congestion
- Deliveries and students go thru High School Office
- Need larger High School Office space
- Need storage and larger work area
- Storage needs to be secure
- Need bigger mailbox area, need place to stack
- Need place for sick students
- ISS area - need larger area, need visual of this room
- Bathrooms need to be private
- Need separate conference room, one know, need two
- Need to be more recognized
- Need better security
- Cameras for security with large screen in office
- Need more vision of front of building
- Existing Staff Lounge - not comfortable and used for everything - not a staff lounge
- Need more meeting space
- More parking out front needed
- Actual work area, redesign work area to be more efficient
- Need more file space
- Larger toilet rooms in office
- Good flow in office now
- Improvements - have kitchenette with sink with wash sink
- Heat in Business Office - individual control would be nice
- Nicer waiting area - larger - secluded
- A central work area with mailboxes
- Business Office needs its own Conference Room
- Kitchenette need sink and serving in business suite
- HVAC - units need to be replaced out front
- Possible second floor enclosure for mechanical equipment
- Weld shop needs room
- Construction - built big area outside classroom
- Move programs to other building
- Record storage

ECTS

Instructional Aids

- Several different labs
- Four different labs - likes to work with special needs
- Hospitality and Tourism class way too crowded - need private area for confidentiality
- Need privacy - small room for private conversation
- Room with glass for view of classroom
- Staff Lounge - as a dedicated Staff Lounge - couch, pop machine
- Just for faculty - toilet rooms (private) and every lab should have an instructional aides
- Aides need more recognition

Skill Center Issues

- Fascia rusty; needs updated
- Smoke stack/incinerator - remove or keep
- Dumpster location and access important - trash collected in three locations - one central location
- Metal fab/machine tool and die have scrap storage. Aesthetics - looks unsightly
- Exterior Skill Center - paint
- ADA Accessibility
- Sidewalks - some need replaced - review all walks
- Receiving at kitchen - ponding water in lot
- Yard drainage and catch basins
- All water flows towards Skill Center - ices up
- Server Area - needs room for expansion
- Public address system - add music if possible - tie into phone

Food Service needs to be expanded with locker room

Miscellaneous Notes

- Air compressor replace
- Replace single pane windows
- Lobby windows single pane also
- Look at replacing other windows
- Utility storage - connected to building
- Seasonal storage - function like Skill Center
- Signage for parking and direction
- Being cutting edge on Technical Schools
- Be a Tech School and self-sufficient
- Showcase technology at the Tech School
- Wind, solar and geothermal

ECTS

- Natural lighting in areas
- Technology and Smartboards - start using technology
- Add computer labs for self-learning internet classes
- Controlled entrance
- Student body in one area at one time - opportunity to be with all students
- Cafeteria and Kitchen need to be renovated
- Rain water collection - for horticulture
- Compactor for trash and shredder, get rid incinerator
- Garage by itself - would be nice to have it attached to the school
- Demo old garage and attach to building
- Need storage
- Loading Dock Area - designed for warehouse classroom
- Warehouse program - use it as storage and a classroom - sign in and sign out
- Possibly flip maintenance and warehouse and get maintenance on an outside wall
- Theory Rooms - need air conditioning, lots of heat develops
- Sawdust is an issue
- Chiller (1992 installation) - three compressors and only one works
- Transformers and lighting need replaced
- Drains need addressed
- HVAC units need replaced - kitchen, cosmetology and office
- Make up air units need replaced
- Sensors on kitchen hoods to shut them down
- Classes - 1. Horticulture, Diesel engine shop program, Heavy equipment - CDL class, Medical, EMT, paramedic, LPN and Fire science, policy, security
- Keep students here all day
- Include bakery in kitchen
- Need 40" double doors on shop rooms
- Need doors to be big enough to bring in equipment

ECTS

Educational Consultant Review Paul Abramson

Introduction

The following is meant as something of a summary report on the results of our work with the Erie County Technical School. It includes two tables, one showing the existing space by department/function, the other looking ahead to the school's future needs, assuming it grows and adds programs as forecast. As you know, all of this material has already been presented to the superintendents.

As it now exists, the ECTS campus, including the Regional Skill Center (RSC), encompasses about 110,000 sq ft (including unfinished space and the possibility of a second floor in some areas of the RSC). The indication is that to accommodate all desired programs and administrative space, approximately 144,000 square feet will be needed. Additional classroom space (approximately 4,000 sq ft) will have to be provided for the RCI program and for any community college activities that may occur.

Obviously, the present ECTS building could not handle the proposed expanded program. Consideration was given to construction of additional buildings and/or to upgrading and using the existing Regional Skills Center building. The RSC is not a particularly attractive building but it contains a great deal of space on two floors that can be converted to program use. Converting and using that building would be more cost-effective than constructing entirely new buildings. However, in order to create a single complex, it is recommended that a connector building be designed and constructed. That connector would probably contain administrative space, dining and socializing areas for students, possibly the culinary program (connected to the student cafeteria) and could become the front door for ECTS and related programs.

Remaining Questions

After our last meeting it seemed to me that three important issues needed further consideration and discussion. These included the desire to have a community college established on the ECTS site (preferably with connections to ECTS); whether/how ECTS could expand its programs now, prior to a major construction project; and the question of providing a full academic program at ECTS so that students could remain on the campus for a full day. I have taken the liberty of commenting on these three issues in the balance of this memorandum.

ECTS

Remaining Questions

1. Establishing a community college.

Erie County needs a community college and there have been discussions about it over a number of years. Those discussions apparently proceed at a rather desultory pace. It is suggested that the superintendents become pro-active and press this issue, even to the point (if Pennsylvania law allows it) of taking the lead and making the school districts the owner/operators of the community college. A logical place for such a college would be on the ECTS campus. There is some urgency to this because community college functions should be included as part of the expansion of ECTS space. If it is not, there will be no incentive for the college to be located on this campus.

2. Getting started.

It is possible for ECTS to expand some programs prior to major reconstruction. If there are programs that need immediate relief, administrative functions could be moved out of the ECTS building (into space that is now empty in the RSC structure). As an example, if the ECTS administrative offices were removed from their existing space, it would be relatively easy to double the cosmetology program. Moving the high school administration would be more difficult, but some portions could be separated, perhaps allowing the health or early childhood programs to expand. In a sense, these would be stop-gap measures, but they should be considered as a means to provide additional opportunities for students more quickly. Consideration also could be given to dropping an under-subscribed program or examining ways in which two under-subscribed programs might share a single space. (Some existing programs use similar computer equipment but different programs and might be able to be operated in the same space.)

3. Adding academic programs.

There was considerable discussion concerning the possibility and desirability of expanding the academic programs offered at ECTS so that students could spend a full day at ECTS, rather than being transported to half-day programs and then back to their home schools for academics. Students attending ECTS would be transported there in the morning and remain all day, saving time for the students and money for the districts. As discussed, students could then return to their home schools for extra-curricular activities including sports, music and clubs. *While it seems sensible, I would caution that there are significant potential side-effects that should be studied carefully.*

ECTS

Summary Paul Abramson

ECTS now has 830 students, approximately half attending in the morning, half in the afternoon. If all of those students stay a full day on the ECTS campus, that creates an 830-student high school with needs for a full-service cafeteria, recreation and/or physical education space and an administrative structure commensurate with a medium-sized high school. It would also bring some teachers to the building full-time. They would need classroom and work space.

If, as planned, ECTS doubles in size with the expansion of existing programs and the addition of several new programs with high demand, a full-day ECTS offering students both academic and technical programs could become a 1,600-student high school, a very large school that could easily become known as the "vocational school" for poor students, rather than (as now) a coveted opportunity for high-level technical education.

Putting 800 to 1,600 students onto a central ECTS campus would also have an effect on the "home" high schools. Faculty would have to be recruited (would each district give up its best teachers or would the best be retained at the home high school?), diluting the faculty and possibly limiting courses available to all students.

By the same token, many of the students who normally take leadership roles in their home schools would not be there. The existing high schools are not so large that these defections can be absorbed without affecting the school program. (As an example, last fall Iroquois High School had about 300 high school students with 34 at ECTS. Union City had 350 students with 40 at ECTS. If the number of programs doubles and students spend a full day at ECTS, Iroquois might lose 68 of its 300 students and Union City 80 of its 350.)

There are alternatives to both the half-day program now in existence and the full-academic program suggested that ought to be investigated. As examples, there are county technical schools where students spend a semester at the technical school, then a semester at their home school getting their academic studies. That has led to some problems in terms of discipline and loss of contact, but it eliminates the half-day program. There are other ways, perhaps better ones, to accomplish the same thing.

One might involved students spending one week at ECTS, the second at their home schools, in each case staying a full day. The advantage is that they retain a close relationship with faculty and friends at both sites and, at ECTS particularly, projects might be planned so that they can be started and completed during a single week. Similarly, academic studies might be organized so that a week of doubled classes completes a section or study.

ECTS

Another way to create a full-day ECTS program for students might be through a six-day rotation so that half the students would go to ECTS on an odd day; half on an even day, each staying a whole day. There are probably many other ways to create a similar opportunity.

In all of these options students would be on campus for a full day and ECTS would take on some added responsibility (certainly the cafeteria program would have to be upgraded and some form of recreational and/or social space would have to be provided) but the overall number of students on the campus would remain at a reasonable level (about 800). At the same time, each district's academic program and faculty would be preserved and the home schools would have control and responsibility for each student's academic progress.

ECTS

Basic Considerations, Rationale and Concepts

1. Several existing programs are oversubscribed and could expand (double up) if space was available (specifically cosmetology, early childhood and health assistant).
2. There is a list of other courses that ECTS would like to start for which space is not now available (public safety, health professions, clerical, natural resources, diesel, and others).
3. There is interest in expanding the academic course offerings for students so that they could take all their school work at ECTS. Indications are that as much as 40% of students might choose this option if offered.
4. It would be educationally advantageous to expose students to a variety of different programs that might utilize their skills. Thus, students who opt for cosmetology might be attracted to the opportunities in nursing and healthcare (or public safety); students enrolled in courses making use of computers (i.e. graphics) might be interested if they were aware that the same skills could be used in drafting. Thus an effort should be made to open up the interior of the building and to make various courses more visible. (As a sidebar, a redesigned facility ought to provide multiple places for exhibits to demonstrate work and skills).
5. Some of the existing programs are in inappropriate or minimal space (especially culinary, early childhood and health assistant).
6. ECTS is home to two programs for alternative education students. Neither program is properly housed now. Each needs its own space.
7. ECTS is home to the RCI program, offering interested high school seniors an opportunity to take college level courses for credit. It needs about five classrooms. There are classrooms now but they are not good spaces.
8. ECTS is home to adult education programs. Welding is a particularly popular one and is often a daytime class. Facilities need to be available for adult use without compromising the ECTS program.
9. There is a desire to bring a community college to the area, preferably on the ECTS site. To make that possible, classrooms and labs would have to be provided.
10. The ECTS building is a good one, quite attractive but too small to house expanded programs. The adjacent Skill Center is not an attractive building but it contains a lot of raw usable space. It should be significantly remodeled to create a full two-story building for selected programs (some of which would move out of the ECTS building).

ECTS

11. In choosing programs to be in the Skill Center and/or the ECTS building, an effort should be made to develop clusters that would expose students to options in areas that would interest them. At the same time, it is important not to put all of the “hard” subjects in one building and the “soft” ones in the other. They should be integrated.

12. An attractive “welcoming” building could be created to connect the two existing buildings. That connecting building could house the ECTS administration, possibly the high school administration, classrooms (or at least provide for future classrooms) and a commons area with food service for students. If so, the culinary program should also be located there.

13. All programs should have the same basic mix of spaces including:

- A. A theory room (classroom) to house all of its students (24). Suggest 750 sq ft.
- B. An office for the teachers. Suggest 110 sq ft minimum (220 where courses are doubled up).
- C. Space for storage of materials. Suggest setting aside 200 sq ft as a minimum for all programs; add as needed for programs where students need changing rooms and where storage needs are greater because of materials used or where projects need to be set aside out of harm's way.
- D. Lockers for boys and girls should be provided for all courses.
- E. Lab space. This will vary by program but 750 sq ft would be minimum for programs that also use off-campus lab space (i.e. tourism).
- F. In programs where two or more sections run at the same time (i.e cosmetology) it may be possible to double up use of lab and/or theory space.

ECTS

Program Space Needs Paul Abramson

<u>Program</u>	<u>Existing</u>	<u>Needed</u>	<u>Comments</u>
Culinary	6,890	10,000	Includes cafeteria; add office (@ 110), lockers with toilet facilities for changing; (4 @ 30 students each), expand "lab" area, storage; add Theory Room (750)
Early Childhood	2,360	5,000	End split space. Two programs, each needs Theory Room (750) and Prep Room. Lab space (1,240) sufficient. Retain offices, kitchen, laundry storage, add lockers for changing.
Cosmetology	2,970	6,000	Current space good but two programs needed. Lockers tight. Possibly expanse into Erie Tech admin offices (1,590); programs could share lab
Health Occupations	1,785	11,000	Adding new programs; theory roommate cluster; each of three programs with lab (1,700), Theory Room (750), office (110), storage (125), lockers (m/f 400) = 3,100 s.f. Programs are diagnostic (radiology tech; may need added space); medical services (nursing, dental asst) and rehabilitation (occupational and physical therapy)
High School Admin.	2,825	4,000	Space tight now
Erie Tech Admin.	1,590	2,250	Add building manager and IT director plus clerical, waiting and rest room expansion.
Tourism	1,130	2,000	Needs lab (750) and Theory Room (750); add office (110), storage and lockers (200). Cluster with culinary to share spaces?
Electro Mechanics & Electronics	4,070	4,070	Okay as is; consider as a cluster. Need a Theory Room? Not clear.
<u>Cluster:</u>		11,500	
Machine Tool & Die	5,785	5,785	Sufficient space
Metal Fabrication	4,110	4,110	Sufficient space but move adjacent to Machine Tool
Adult Welding (new to building)	New	1,500	Added space for welding booths, lockers, storage, office
Drafting & Design	2,100	2,100	Sufficient as is
Alternative Ed - MS		5,000	Include tech lab (1,400), 4 Theory Rooms (2,400), time out (50), 5 offices (550), Conference Room (for 6 to 8), lockers, storage
Alternative Ed - HS		5,000	Similar space to MS - both need to be developed with staff

ECTS

<u>Cluster: Transportation</u>		20,000	
Auto Mechanics	9,375	9,400	Need added lockers, Theory Room
Auto Body	4,570	4,800	Office small, Theory Room small, sand blasting room needed.
Diesel	New	5,500	Provide Theory Room (750), lab (4,770), office (110), lockers, storage. Share some with cluster.
<u>Cluster: Construction</u>		17,800	
Building Trades	8,995	9,510	Theory Room small, lockers. Take IT room?
Building Trades Maintenance	4,180	4,180	
HVAC	New	4,110	Take over existing metal fabrication space
<u>Cluster: Bus Mgt & Info Tech</u>		15,000	Space for toilets facilities circulation
Web Design	New		Lab (1,500); office (110); storage (200); ½ Theory Room (375) = 2,185 per program
Computer Info System	1,730		
Networking	670		
Clerical	New		Two programs
Marketing Mgt.	New		
<u>Cluster: Communications</u>		5,120	
Commercial Art	1,595	2,560	Lab (1,500); Theory Room (750), storage (200), Offices (110)
Graphic Communications	2,335	2,560	Lab (1,500); Theory Room (750), storage (200), offices (110)
<u>Cluster: Engineering:</u>		4,730	No details available. Space equals welding shop.
<u>Cluster: Law, public safety</u>		9,460	No details. Include labs, Theory Rooms, offices, physical conditioning space, room for vehicles (ambulance, fire truck?). Space equals two welding shops, ground floor.
EMT/Fire	New	4,730	
Police	New	4,730	

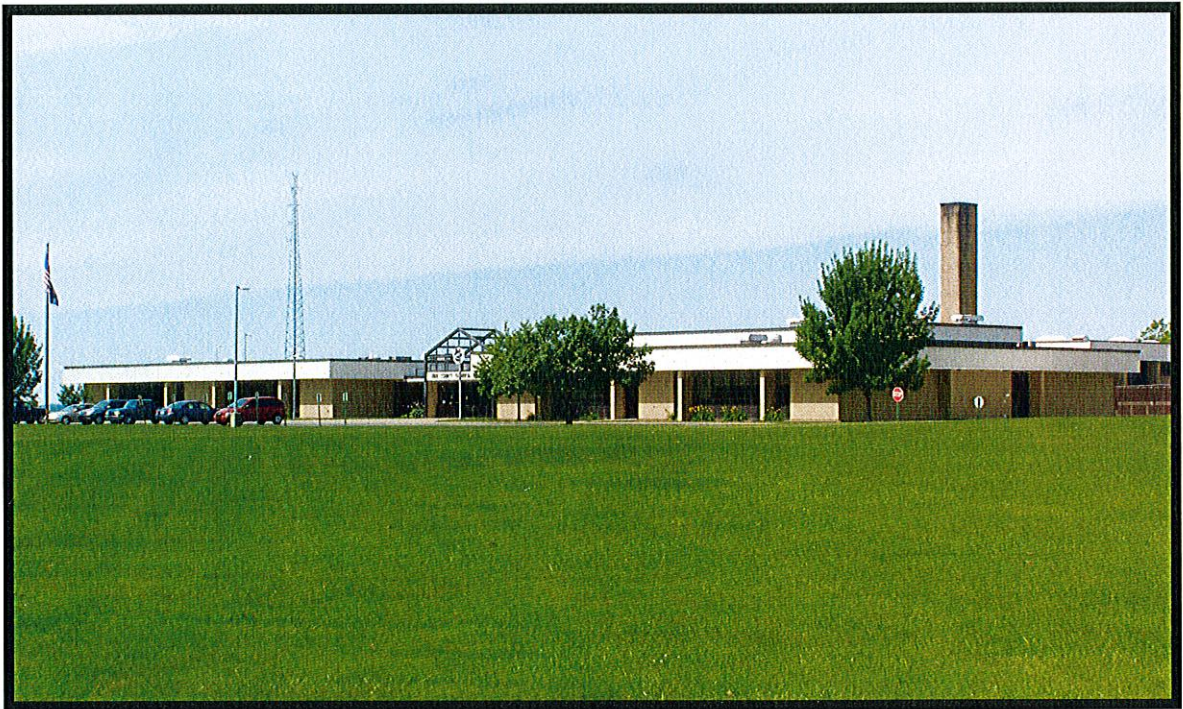
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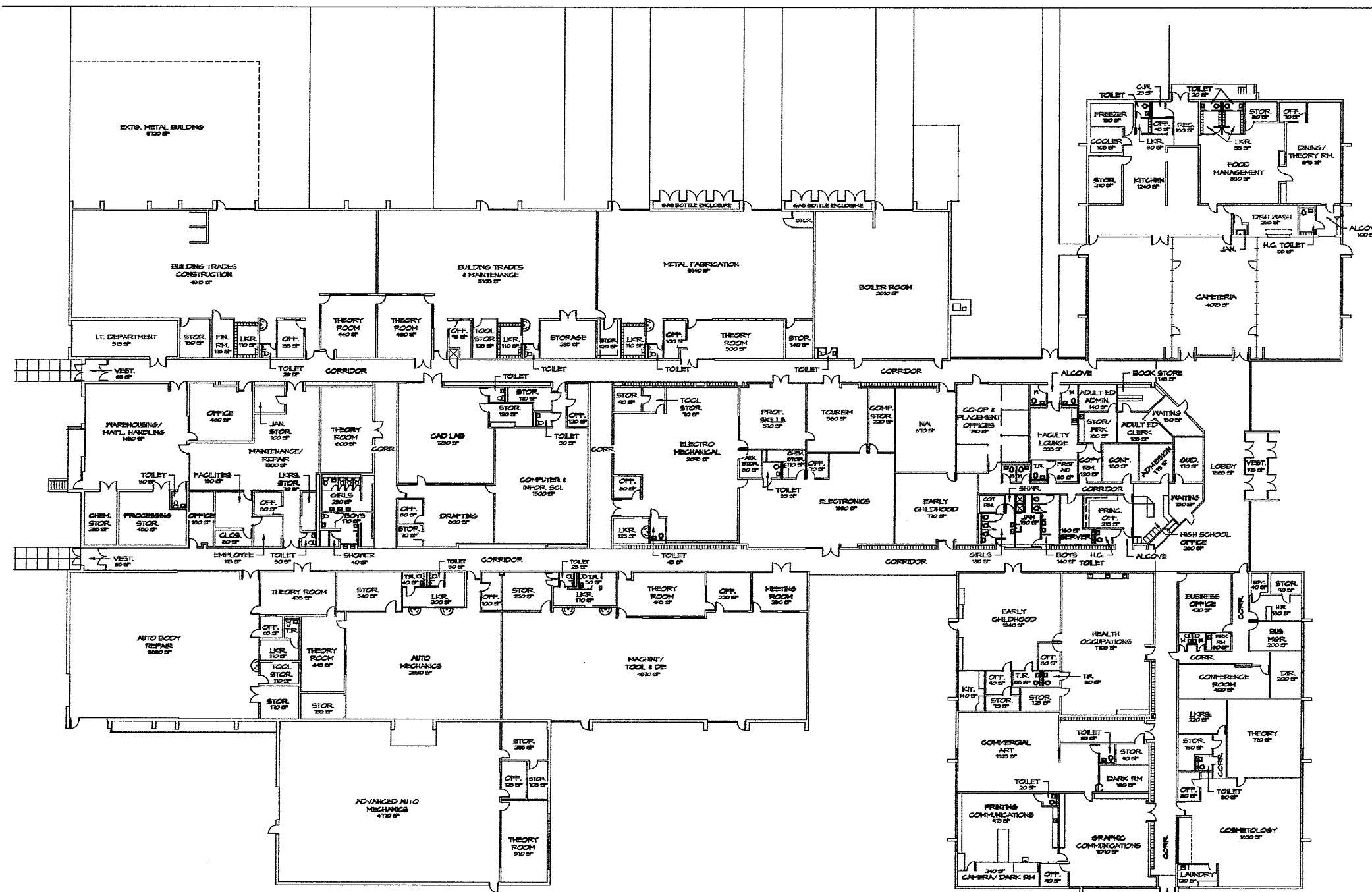
Existing Site Plan



ECTS

Existing Floor Plan Erie County Technical School





FLOOR PLAN
SCALE 1/8" = 1'-0"

HALLGREN RESTIVO LOOP & COUGHLIN ARCHITECTS
4380 West 12th Street
Erie, Pennsylvania 16505
Phone: 814-838-6566
Fax: 814-838-6568
email: hrisc@hrcarchitects.com

EXISTING
ERIE COUNTY TECHNICAL SCHOOL
8500 OLIVER ROAD
ERIE PA

SHEET NAME
FLOOR PLAN

REVISIONS

DECEMBER 2000

A100

E C T S

Existing Floor Plan Regional Skill Center



HALLGREN HESTRO LOOP & COUGHLIN
ARCHITECTS
4350 West 12th Street
Erie, Pennsylvania
16505
Phone: 814-838-8586
Fax: 814-838-8588
email: hrlc@hrlcarchitects.com

EXISTING
Regional Skill Center
For
ERIE COUNTY TECHNICAL SCHOOL
8500 OLIVER ROAD ERIE, PA 16509

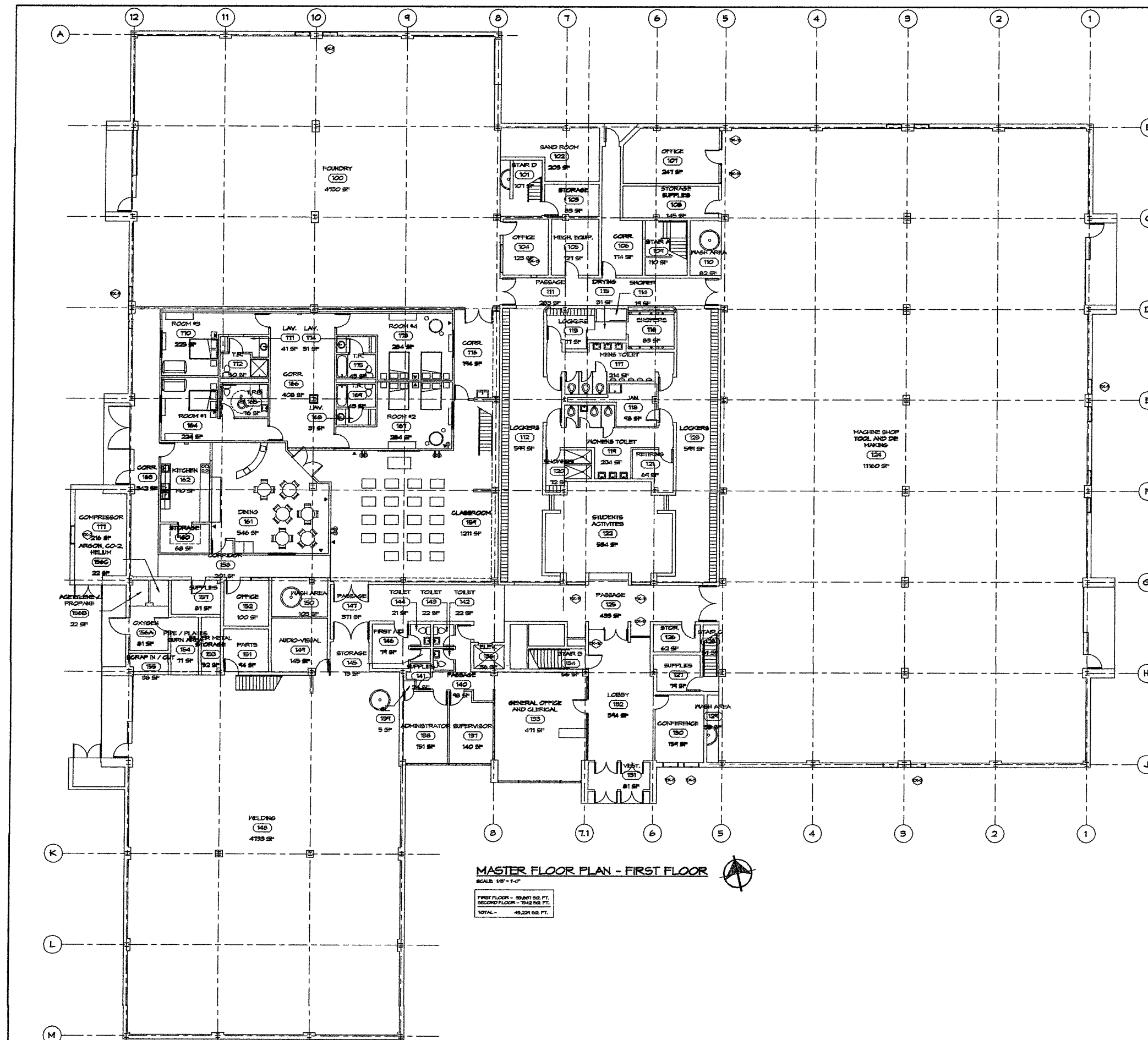
SHEET NAME
FIRST FLOOR PLAN

REVISIONS

DECEMBER 2009

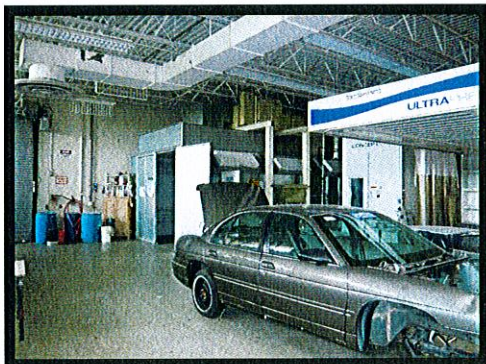
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DATE: 11/15/09



ECTS

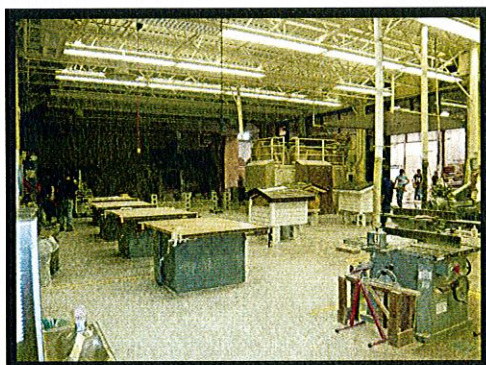
Existing Interior Photos



AUTO BODY



CORRIDORS



BUILDING TRADES



ELECTRICAL



GRAPHICS



LABORATORY

E C T S

Schematic Spatial Needs Plan

ECTS**Proposed Floor Plan
Scenario 1**

The following proposed plan would add approximately 90,000 square feet of new construction to the existing buildings. The majority of the new addition would be to the west of the current building.

The existing building would be reorganized to support the current functions, interior finishes would be updated and the existing construction would be made handicap accessible.

The estimated cost of the addition and renovation to the existing building for Scenario 1 would be:

\$ 40 million

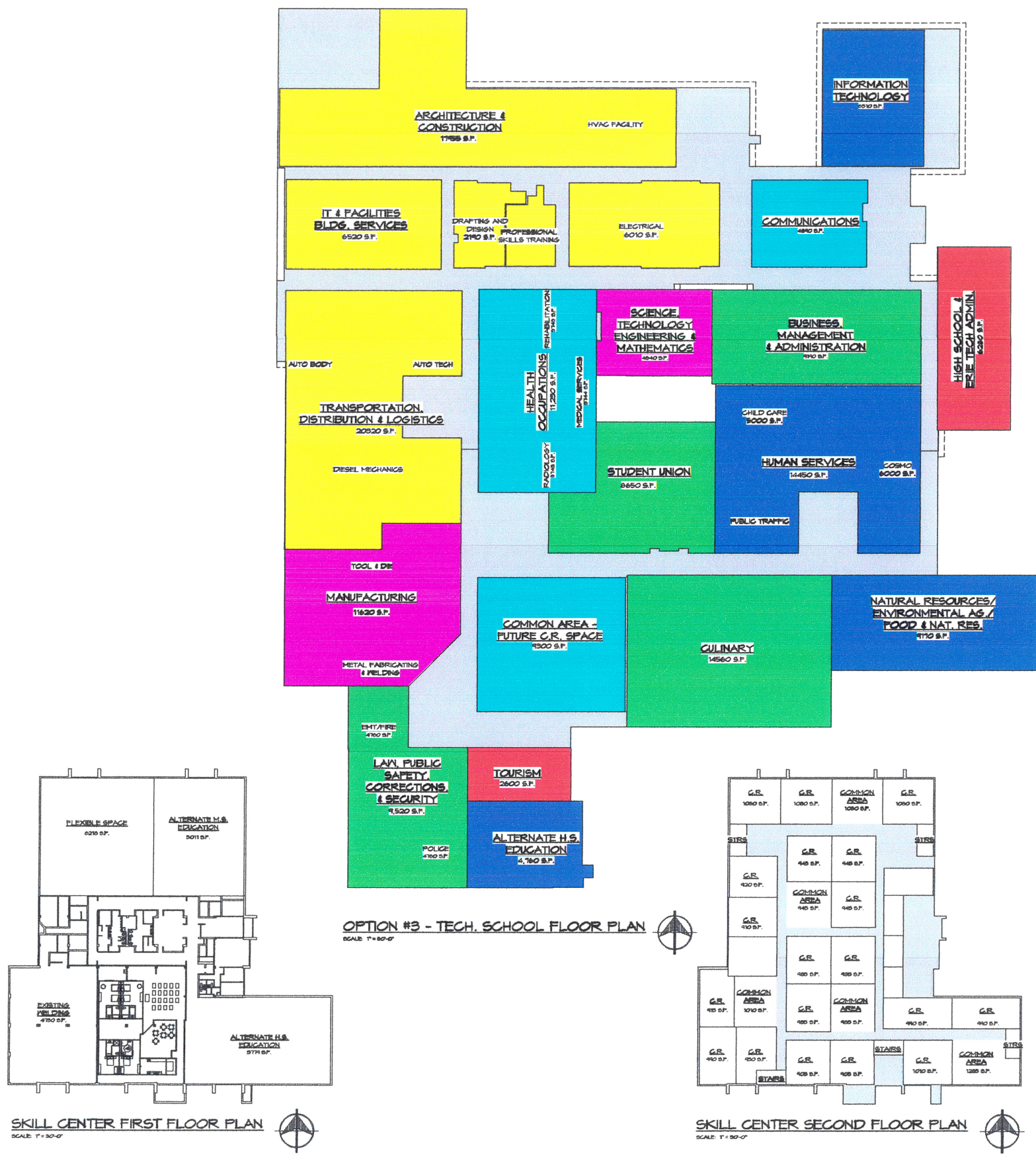
EXISTING
ERIE COUNTY TECHNICAL SCHOOL
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SHEET NAME
 SCENARIO #1

REVISIONS

MARCH 2000

S1



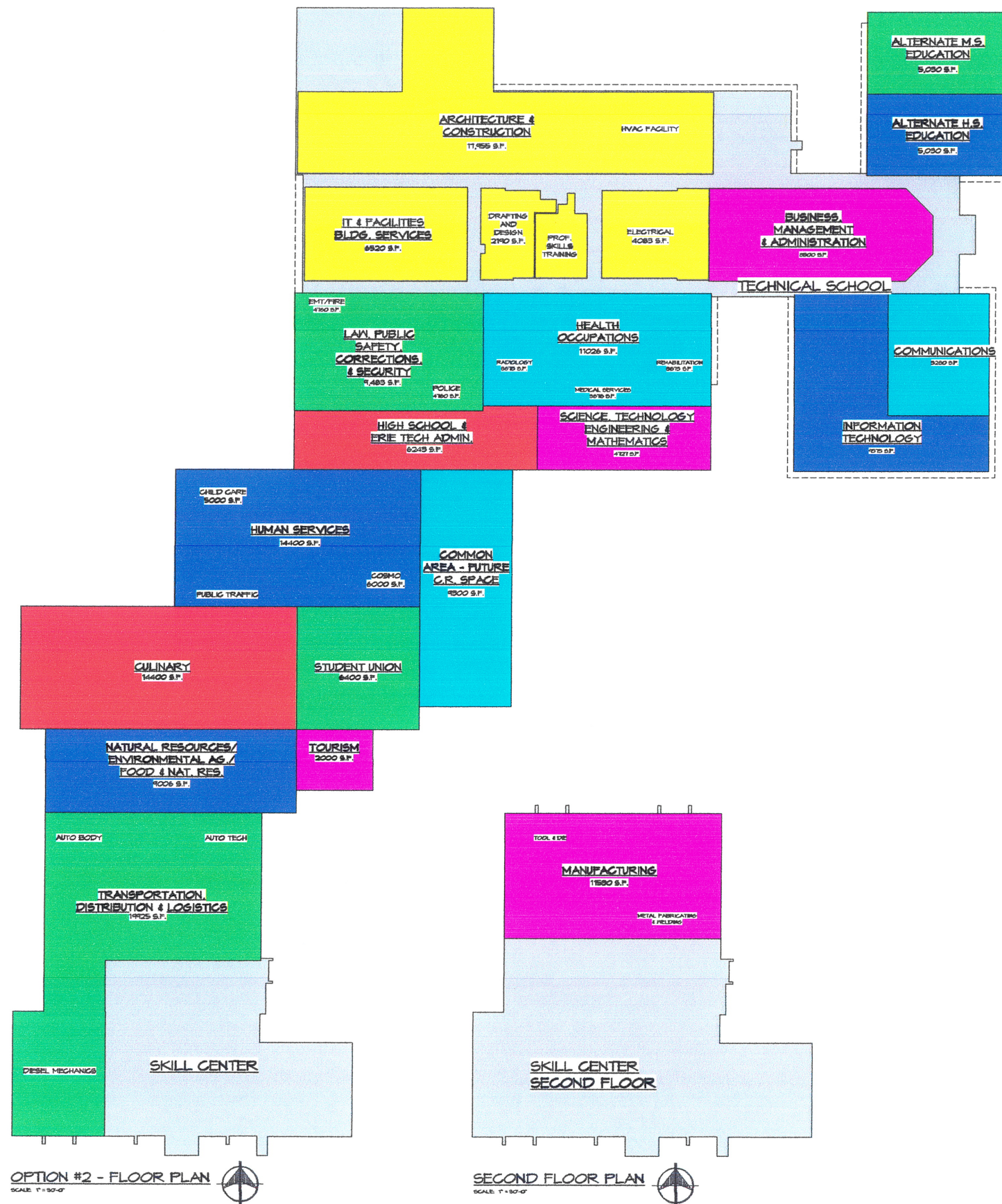
ECTS**Proposed Floor Plan
Scenario 2**

The following proposed plan would add approximately 150,000 square feet of new construction to the existing buildings. The majority of the new addition would be to the west of the current building.

The existing building would be reorganized to support the current functions, interior finishes would be updated and the existing construction would be made handicap accessible.

The estimated cost of the addition and renovation to the existing building for Scenario 2 would be:

\$ 47 million



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SHEET NAME
SCENARIO #2

REVISIONS

MARCH 2009
S2

ECTS**Proposed Floor Plan
Scenario 3**

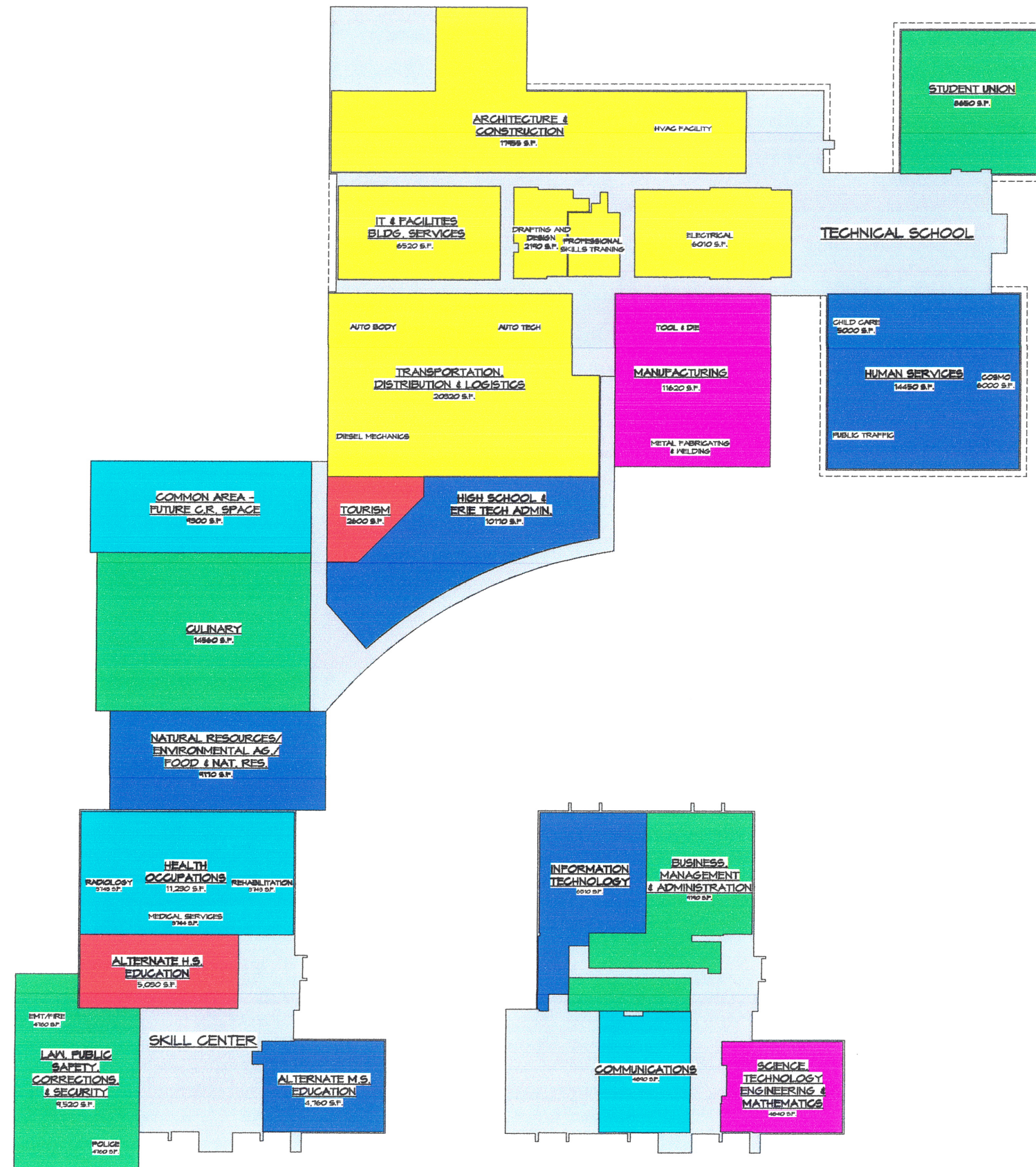
The following proposed plans would add approximately 150,000 square feet of new construction to the existing building. The new addition would be to the west.

The existing building would be reorganized to support the current functions, interior finishes would be updated and the existing construction would be made handicap accessible.

The estimated cost of the addition and renovation to the existing building for Scheme 3 would be:

\$ 47 million

OPTION #1 - FLOOR PLAN
SCALE: 1" = 50'-0"



SECOND FLOOR PLAN
SCALE: 1" = 50'-0"



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SHEET NAME

SCENARIO #3

REVISIONS

MARCH 2009

S3

ECTS

Breakdown of Construction Costs

	Scenario 1	Scenario 2	Scenario 3
New Construction Area for Existing Programs	37,000 sq. ft.	91,050 sq. ft.	74,200 sq. ft.
New Construction Cost for Existing Programs	\$ 6,475,000	\$ 15,933,750	\$ 12,985,000
New Construction Area for New Programs	53,000 sq. ft.	58,950 sq. ft.	75,800 sq. ft.
New Construction Cost for New Programs	\$ 9,275,000	\$ 10,316,250	\$ 13,265,000
Renovated Construction Area for Existing Programs	95,600 sq. ft.	81,500 sq. ft.	98,600 sq. ft.
Renovated Construction Cost for Existing Programs	\$ 15,104,800	\$ 11,002,500	\$ 13,311,000
Renovated Construction Area for New Programs	57,400 sq. ft.	71,500 sq. ft.	54,400 sq. ft.
Renovated Construction Cost for New Programs	\$ 9,145,200	\$ 9,747,500	\$ 7,439,000
	243,000 sq. ft.	303,000 sq. ft.	303,000 sq. ft.
Total Estimated Cost	\$40,000,000.00	\$ 47,000,000.00	\$ 47,000,000.00