December 8, 2014

WILKES-BARRE AREA SCHOOL DISTRICT
FEASIBILITY STUDY

Prepared by:

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EXECUTIVE SUMMARY

In August 2014 Wilkes-Barre Area School District authorized a District-Wide Facility Study with a focus on developing options to address perceived facility and educational deficiencies associated with its secondary centers. The District created a Study Team including Board Members and Administration, retained a construction manager, Apollo Group, Inc., and retained the architectural team of A+E Group JV, Borton-Lawson Architecture, Leonard Engineering, Inc., and Williams Kinsman Lewis Architecture, P.C. (hereinafter, Team) to assist the District in the endeavor.

The Study has been developed as a tool to assist the District in its planning and decision-making. As part of the Study, the Team conducted interviews with Board members, administration, and staff. Facilities were evaluated based on a multitude of factors including for example, mechanical, electrical, plumbing and fire protection system assessments; universal accessibility; educational programming; building capacity; enrollment projections; vehicular and pedestrian circulation; historical use patterns; and building codes.

A series of options were developed to respond to the identified deficiencies and the District's goals. The options were refined after review with Board members and district administration.

The School District owns the following facilities:

- James M. Coughlin Sr. High School
- Elmer L. Meyers Jr./Sr. High School
- G.A.R. Jr./Sr. High School
- Solomon-Plains Elementary/Jr. High School
- Daniel J. Flood Elementary School
- Boyd Dodson Elementary School
- Dr. David W. Kistler Elementary School
- Heights-Murray Elementary School
- Former Edward Mackin Elementary School
- District Administration Building
- Wilkes-Barre Township Maintenance Building
- Former Plains Jr. High School

The Team is pleased to submit this Study to the District. School Board members, district administration, and District staff provided assistance and contributed to the preparation of this study. The Team appreciates the assistance of all individuals who assisted in the study, and would like to thank the current Board, administration, and staff members who provided assistance, including:

School Board

Louis M. Elmy	President
John R. Quinn	Vice-President
Joseph A. Caffrey	Board Member
Ned J. Evans	Board Member
Dino L. Galella	Board Member
Christine A. Katsock	Board Member
Dr. James F. Susek	Board Member
Denise Thomas	Board Member
Reverend Shawn Walker	Board Member

District Administration

Dr. Bernard Prevuznak	Superintendent
Leonard B. Przywara	Secretary / Business Manager
Raymond P. Wendolowski, ESQ	Solicitor
Mr. Brian Costello	Director of Secondary Curriculum
Dr. Rochelle Koury	Director of Elementary Curriculum
Mr. Robert Mehalick	Director of Special Education
Dr. Deborah Mileski	Director of Pupil; Personnel
Mr. Frank Castano	Director of Human Resource Services
Mr. Gene Manning	Director of Technology
Mr. John Chiemento	Director of Building and Grounds
Mr. Brian Lavan	Resource Officer
Mr. Robert Makaravage	Cyber School Administrator, Acting
Mr. Patrick Patte	Principal – James M. Coughlin Sr. High School
Mrs. Coleen Robatin	Principal – GAR Jr./Sr. High School
Mr. Michael Elias	Principal – Elmer L. Meyers Jr./Sr. High School
Mr. John Woloski	Principal – Solomon-Plains Jr. High School
Mr. Sean Flynn	Principal – Solomon-Plains Elementary School
Ms. Margo Serafini	Principal – Dr. David W. Kistler Elementary School
Mr. Harold Gabriel	Principal – Heights-Murray Elementary School
Mrs. Marlena Nockley	Principal – Daniel Flood Elementary School
Mr. Michael Grebeck	Principal – Boyd Dodson Elementary School

District Overview

DISTRICT OVERVIEW

Wilkes-Barre Area School District is located in Luzerne County on the east side of the Susquehanna River. The District serves the municipalities of Wilkes-Barre City, Wilkes-Barre Township, Plains Township, Bear Creek Township, Buck Township, Bear Creek Village, Laurel Run Borough, and Laflin Borough. The District covers approximately 117 square miles. A map, following, identifies the District within Luzerne County and the surrounding area.

The District operates four K-6 elementary schools, one K-8 elementary / junior high school, two 7-12 junior / senior high schools, and one 9-12 high school. A map, following, identifies the District's facilities within Luzerne County and the surrounding area.

In addition, the District converted the former Wilkes-Barre Township Jr. High School to a maintenance and storage facility, the former Edward Mackin Elementary School to a temporary storage facility, has an administration building distinct from its educational facilities, owns a large tract of land off of Empire Street in Wilkes-Barre Township, and leases the former Plains Jr. High School to the Luzerne County Intermediate Unit No. 18. A map, following, illustrates the District within Luzerne County and the surrounding area.

The District sends students to attend the Wilkes-Barre Career & Technical Center, a traditional vocational school, and is a member of the Luzerne County Intermediate Unit No. 18. The District provides classroom space throughout its educational facilities to the Intermediate Unit for the Intermediate Unit's programs.

Table 1.1, following, identifies each municipality's demographic characteristics. The data was collected from the 2010 Census.

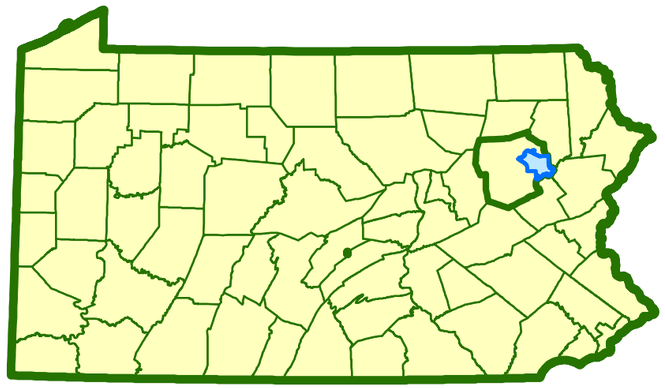
WILKES-BARRE AREA SCHOOL DISTRICT - DEMOGRAPHIC STATISTICS

Municipality	Square Miles	Population	Households	Families	% of Families w/ Children	White	Black	Hispanic	Asian	Other	Median Age	Median Income
Bear Creek Borough	2	238	119	80	25.00%	99.75%	0.00%	0.08%	0.04%	0.04%	54	$ 60,000
Bear Creek Twp.	68.7	2,774	1,126	806	38.60%	98.88%	0.05%	0.08%	0.05%	0.01%	45	$ 43,900
Buck Township	17	435	178	120	34.20%	97.00%	1.06%	0.02%	0.07%	0.05%	57	$ 35,556
Laflin Borough	1.4	1,487	625	438	36.50%	94.80%	0.00%	0.05%	4.05%	0.02%	48	$ 71,700
Laurel Run Borough	5.2	500	223	132	33.00%	99.45%	0.02%	0.08%	0.04%	0.04%	48	$ 39,135
Plains Township	13.2	9,961	4,389	2,709	35.90%	98.33%	1.03%	1.04%	1.04%	0.00%	48	$ 47,490
Wilkes-Barre City	7.2	41,498	16,874	9,108	47.70%	79.02%	10.09%	11.03%	1.00%	0.03%	34	$ 30,777
Wilkes-Barre Twp.	2.9	3,235	1,455	846	22.30%	88.50%	3.02%	0.02%	6.04%	0.00%	42	$ 40,504
District Wide Totals	117.6	60,128	24,989	14,239								
District Wide Averages					42.71%	84.42%	7.31%	7.79%	1.29%	0.02%	37.97	$ 36,141

2010 US Census
2008-2012 American Community Survey

A family is a group of two people or more (one of whom is the householder) related by birth, marriage or adoption and residing together.

A household consists of all the people who occupy a housing unit. A house, an apartment or other group of rooms, or a single room, is regarded as a housing unit when it is occupied or intended for occupancy as separate living quarters; that is when the occupants do not live with any other persons in the structure and there is direct access from the outside or through a common hall.



WILKES-BARRE AREA SCHOOL DISTRICT
LUZERNE COUNTY, PA

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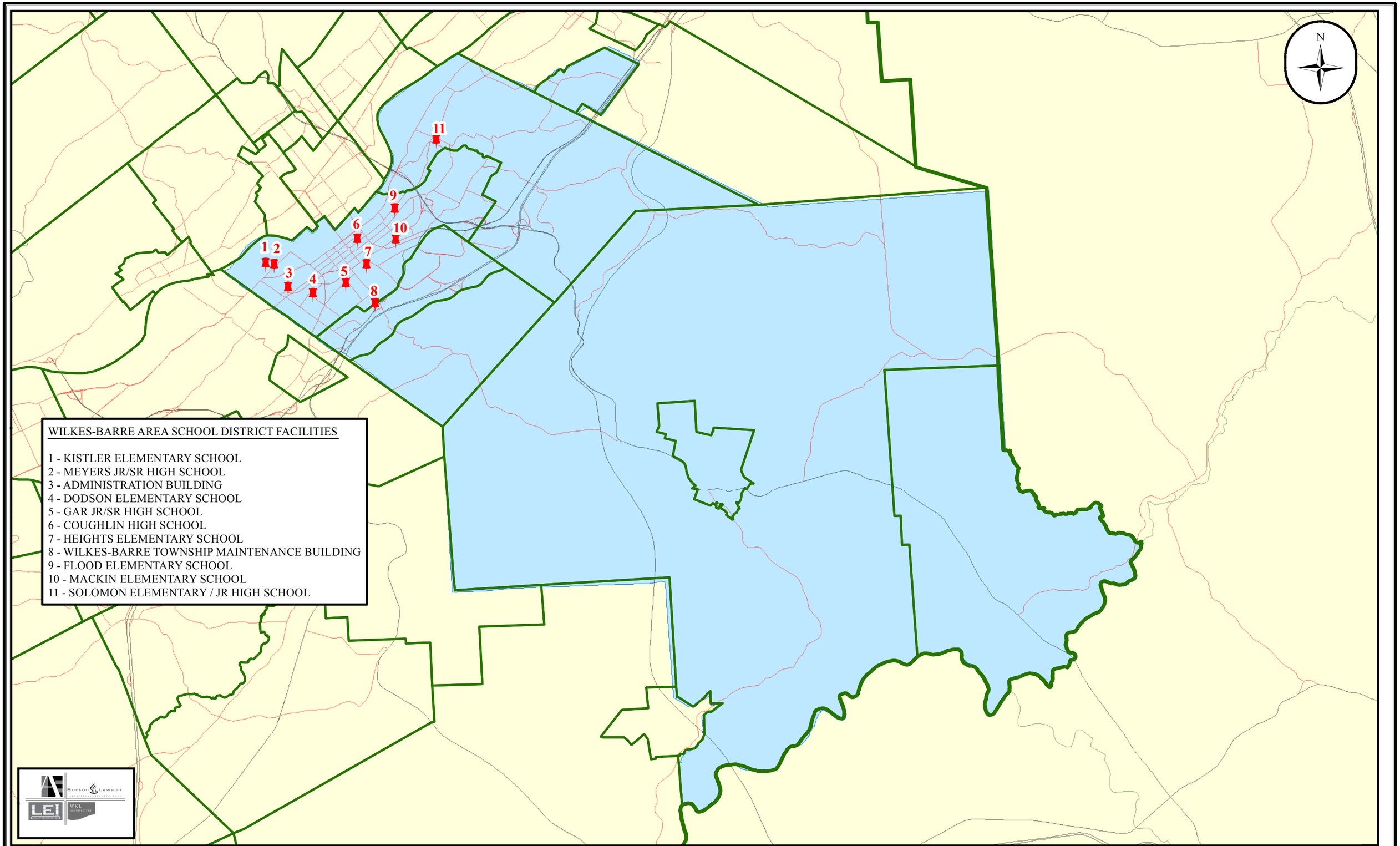
WILKES-BARRE AREA SCHOOL DISTRICT MUNICIPALITIES

1 - WILKES-BARRE CITY
2 - WILKES-BARRE TOWNSHIP
3 - PLAINS TOWNSHIP
4 - LAFLIN BOROUGH
5 - LAUREL RUN BOROUGH
6- BEAR CREEK TOWNSHIP
7 - BEAR CREEK VILLAGE
8 - BUCK TOWNSHIP

Borton Lawson
LEI
WKL ARCHITECTURE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WILKES-BARRE AREA SCHOOL DISTRICT FACILITIES
1 - KISTLER ELEMENTARY SCHOOL
2 - MEYERS JR/SR HIGH SCHOOL
3 - ADMINISTRATION BUILDING
4 - DODSON ELEMENTARY SCHOOL
5 - GAR JR/SR HIGH SCHOOL
6 - COUGHLIN HIGH SCHOOL
7 - HEIGHTS ELEMENTARY SCHOOL
8 - WILKES-BARRE TOWNSHIP MAINTENANCE BUILDING
9 - FLOOD ELEMENTARY SCHOOL
10 - MACKIN ELEMENTARY SCHOOL
11 - SOLOMON ELEMENTARY / JR HIGH SCHOOL
Borton Lawson
LEI
WKL

Educational Program

MISSION, VISION, SHARED VALUES

MISSION:

The mission of the Wilkes-Barre Area School District, a diverse and progressive educational system, is to educate, enlighten, and inspire each student to grow as a responsible and productive citizen. This mission is accomplished through a dynamic, comprehensive curriculum and collaboration among school, family and community.

VISION:

The Wilkes-Barre Area School District:

- Will empower all students to meet or exceed expectations for academic, social, and emotional growth and success
- Will provide opportunities for students to develop creative and critical problem-solving skills, as innovative learners, to meet dynamic global changes
- Will maximize our use of resources through collaborative partnerships with our community, our business and education partners
- All students will be prepared to pursue excellence for tomorrow's challenges

SHARED VALUES:

The beliefs of the Wilkes-Barre Area School District are that

- Each child is an important individual with inherent worth
- The entire community must work together to ensure a quality education.
- All students can learn
- The appreciation and desire for life-long learning is an essential value that is necessary in a changing society
- Students should share an appreciation of diversity within our community and the entire world
- Education is a giving partnership among school, student, family and community that enables students to become responsible and productive members of society
- All students should have a safe and secure learning environment
- Education is best promoted in an environment that permits the school community to have pride
- The school has a responsibility to provide a model for our students to emulate and that teaches by example, the essential lessons about justice personal integrity and responsibility
- All persons grow and develop through time and that recognition of both growth and capacity for growth is critical to obtain the greatest educational benefit for our students
- In order to achieve at a high level, students require high standards, a variety of instructional strategies, a knowledgeable, caring and responsible staff, up-to-date technology and resources and a flexible and challenging plan for instruction
- A complete education requires the development of this ability to work both collaboratively and independently.

ALIGNMENT & CURRICULUM

ALIGNMENT:

The District operates four K-6 elementary schools, one K-8 elementary / junior high school, two 7-12 junior / senior high schools, and one 9-12 high school. Kindergarten is a full-day program. Art, music, and physical education programs are provided at all schools.

CURRICULUM:

The High School (grades 9-12) is in session between 8:20 am and 3:30 pm. A typical period is 45 minutes. Lunch is 30 minutes. Required curriculum and total years required includes:

- Physical Education (4)
- English (4)
- Social Studies (3)
- Science (3)
- Math (3)
- Health (1)

The Junior High School (grades 7-8) is in session between 8:05 am and 3:15 pm. A typical period is 45 minutes. Lunch is 30 minutes. Required curriculum and total years required includes:

- Physical Education (2)
- English (2)
- Social Studies (2)
- Science (2)
- Math (2)
- Reading (2)
- Specials - Art, Music, Library, Physical Education, Enrichment (2)
- Health (1)
- Career Explorations (1)
- Computer (1)

The Elementary School (grades K-6) is in session between 9:00 am and 3:00 pm. Students in Kindergarten through Grade 3 are self-contained. Lunch is 30 minutes. Curriculum includes:

- English & Language Arts
- Social Studies
- Science
- Math
- Specials - Art, Music, Library, Physical Education, Enrichment
- Recess

SPECIAL EDUCATION

Special education classes are provided throughout all the schools in the District. The District offers to students who may be in need of special education and related services the following programs:

- Autism/pervasive development disorder
- Visual impairment including blindness
- Hearing impairment including deafness
- Emotional disturbance
- Specific learning disability
- Speech and language impairment
- Other health impairment
- Orthopedic impairment
- Traumatic brain injury
- Mental retardation
- Multiple disabilities

BUILDING CAPACITY

The Building Capacity, or how many students the building can house, can vary based on the student to teacher ratios the school district uses. The Pennsylvania Department of Education (PDE) assigns 25 students to classroom. PDE assigns a value or capacity of 0 students to classrooms under 660 square feet. Classrooms less than 660 SF are not included in the calculation for building capacity.

The Building Capacity of each current school facility is as follows:

- James Coughlin High School 955
- Elmer L. Meyers Jr./Sr. High School 717
- GAR Jr/Sr. High School 1198
- Solomon Plains Elementary / Jr. High 1680
- Daniel J. Flood Elementary 600
- Boyd Dodson Elementary 225
- Dr. David W. Kistler Elementary 950
- Heights-Murray Elementary 800

SUMMARY OF EDUCATIONAL DEFICIENCIES

Generally, the District's educational facilities have exceeded functional capacity. All facilities excluding the Solomon-Plains schools have systems that have exceeded recommended life expectancies, fail to comply with current codes, or are energy inefficient. Moreover, the educational spaces lack the ability to accommodate current student enrollment and educational programming. Without substantial modernization and improvements the facilities will be obsolete in a short term.

The following list summarizes some of the educational space deficiencies found in the school facilities.

James M. Coughlin Sr. High School

- 35% of the regular classrooms are below PDE requirement of 660 SF
- Science labs obsolete
- Health room should be provided
- Learning support rooms should be provided
- Life skills rooms w/ restrooms should be provided
- Autistic room should be provided
- Small group instruction areas should be provided
- Itinerant areas
- Large group instruction area should be provided
- Long distance learning area should be provided

Elmer L. Meyers Jr./Sr. High School

- 67% of the regular classrooms are below PDE requirement of 660 SF
- Science labs obsolete
- Small group instruction areas should be provided
- Itinerant areas should be provided
- Large group instruction areas should be provided
- Long distance learning should be provided

G.A.R. Jr./Sr. High School

- Two additional science labs should be provided
- Physics lab should be provided
- French classroom should be provided
- Title 1 room should be provided
- Small group instruction areas should be provided
- Emotional support classroom should be provided
- Itinerant areas should be provided
- Large group instruction area should be provided
- Long distance learning area should be provided

Solomon-Plains Elementary & Jr. High School

- Inadequate kitchen & serving areas
- Gymnasium is undersized
- Two art rooms should be provided
- Two music rooms should be provided

- Small group instruction areas should be provided
- Itinerant areas should be provided
- The playground should be fenced off from the drive and parking area
- Nurse suite is undersized and in need of private conference area
- Large group instruction area should be provided
- Long distance learning area should be provided

Daniel J. Flood Elementary

- Inadequate kitchen & serving areas
- Gymnasium is undersized
- Stage (converted to music room) should be returned
- Art room should be provided
- Music room should be provided
- English language learner room should be provided
- Special education classroom should be provided
- Computer room should be provided (library area is used)
- Two Title 1 rooms should be provided
- Small group instruction areas should be provided
- Itinerant areas should be provided
- Kindergarten playground is unsafe and not used
- Nurse suite is undersized and in need of private conference area

Dodson Elementary

- 60% of the regular classrooms are below PDE requirement of 660 SF
- Inadequate kitchen & serving areas
- Gymnasium is undersized
- Music room (stage is used) should be provided
- Four kindergarten rooms should be provided
- Two English language learner rooms should be provided
- Four Title 1 rooms should be provided
- Speech and vision rooms should be provided
- Art room is obsolete
- Small group instruction areas should be provided
- Itinerant areas should be provided
- Playground is shared with parking area
- Nurse suite is in need of private conference area and rest room
- Guidance is undersized and in need of a private conference area

Dr. David W. Kistler Elementary

- Inadequate kitchen
- Gymnasium is undersized
- Two art rooms should be provided
- A music room should be provided
- Kindergarten room should be provided
- Three Title 1 rooms should be provided
- Small group instruction areas should be provided
- Itinerant areas should be provided
- Occupational therapy room should be provided

- Learning support classrooms should be provided

Heights-Murray Elementary

- An autistic room should be provided
- Two English language learner rooms should be provided
- Four Title 1 rooms should be provided
- Speech room should be provided
- Small group instruction areas should be provided
- Itinerant areas should be provided

EDUCATIONAL RECOMMENDATIONS

District personnel have identified the following instructional practices and other suggestions to be considered and, where possible, provided for or implemented in future updating and new facilities:

- Interactive classrooms to allow teachers and students to create and participate in discussion, brainstorm ideas, and present work
- Dedicated space and resources for special instruction and counseling in language, speech, guidance, psychological testing, and special education
- Dedicated space and resources for art, music, and physical education
- Dedicated remedial assistance and instructional areas, including tutoring areas, small group instruction, and smaller class size verses a full-size traditional class
- Convenient location within a school of special instruction, counseling, remedial assistance and private instructional areas such that the areas are easily accessible to the entire school enrollment
- Implementation of wireless technology, interactive white boards, and other current technology in traditional classrooms
- Student desk-based charging and data connections for laptop computers and tablets
- A large staff planning and conference area at each school for educational planning and meetings
- Ample office space and conference areas for administration in each school
- Ample storage space for student belongings in lockers and classrooms, where applicable
- Private bathrooms located within the traditional Kindergarten classroom and, where feasible, in life skills, autistic, and special education areas
- Areas within all traditional classrooms for group activities and team learning
- Separate areas for a cafeteria, multi-purpose room and gymnasium
- Private nurse / health / wellness meeting and conference areas with independent phone lines and facsimile machines
- Dedicated meeting and conference areas for Title 1 programs, tutoring and reading and math specialists, itinerant instruction, and speech and vision programs

Enrollment Projections

ENROLLMENT PROJECTIONS:

The enrollment projection model used by the Pennsylvania Department of Education (PDE) is patterned after models variously called educational progression or school retention. Projection models of this nature are based on the concept that students progress routinely from one grade to another and that internal policies and external factors that influenced grades in the past will continue to influence the progression of students from grade to grade in the future.

The PDE model uses enrollment data reported annually by all local education agencies to the Division of Data Services on the Public School Enrollment Report (ESPE). Resident live birth data is provided by the Pennsylvania Department of Health. Grade progression is determined by calculating retention rates for grades 2 to 12 using the most recent five years of enrollment data. Retention rates for kindergarten are determined by births five years earlier and for the first grade from births six years earlier. These rates are evaluated to determine if a pattern is discernible or if any retention rates are discarded and the average of the remaining rates is used in making the projections. Non-graded elementary and secondary students are prorated across grades before retention rates are calculated. Because of that proration, the number of students shown in various grades will differ from the number of students reported. The total number of students may also differ slightly.

Basic Limitations of the Model

A. Internal policy changes that can affect the accuracy of projections
   - Policy on how old a child must be before being admitted until kindergarten and first grade
   - Policy on when and how a student is evaluated for special education services
   - Policy on how many students the vocational-technical school is to receive
   - Policy on who provides full-time special education programs
   - Policy on scholastic retention and acceleration

B. External factors that can affect the accuracy of projections
   - The opening or closing of a non public school
   - A significant increase or decrease in new home building
   - A shift in migration patterns

C. Other considerations
   - Actual live birth data for the most recent year are added annually. However, enrollment projections beyond five years are subject to errors in the lower grades resulting from inconsistencies between actual and projected live births and should be reviewed closely

Changes due to internal policy changes and/or external factors may have a positive or negative impact on the accuracy of these projections. If the District is concerned that PDE's projections do not accurately reflect the conditions within the District, PDE would

encourage the District to hire a consultant to provide a local demographic analysis with customized enrollment projections.

PDE permits districts to design school improvement projects with potential for state reimbursement funding based on the following school capacity criteria:

1. The largest projected enrollment for a 10 year time period as projected by PDE, or
2. The largest projected enrollment for a 10 year time period as projected by a qualified independent demographic analysis professional, or
3. The current school district enrollment plus a maximum of 10% increase in enrollments.

Planned building capacities are then compared to PDE's projected 10 year enrollments. Discrepancies greater than plus or minus 300 students at the elementary, middle school, or high school levels require district justification to PDE.

District administration and personnel have indicated that, in general, they feel the District enrollment is growing. Interviews with District administration and personnel revealed a consensus that the PDE enrollment projections appear likely to occur. Therefore, at this time, the PDE projections are utilized.

PDE enrollment projections for Wilkes-Barre Area School District are reproduced in Table 3.1. The projections are based on actual enrollments for October 2011. Projections through 2021-2022 are listed.

The average current size for each grade level within the Wilkes-Barre Area School District ranges from 427 to 546 students with an average of 523 students per grade. Between 2014 and 2022 the PDE projections indicate a slightly decreasing enrollment in grades K-6 and a 14-15% increase in enrollment in grades 7-12.

District Board and administration have indicated that options that are considered involving new construction should provide a design capacity for the current average enrollment per grade level plus an amount for growth.

Revised: 7/2012 (2011 Enrollments)

Enrollment Projections
Prepared by the Pennsylvania Department of Education
(717) 787-2644

Wilkes-Barre Area SD **1-18-40-885-2**

YEAR	K	1	2	3	4	5	6	7	8	9	10	11	12	Total
2007-2008	434	518	480	474	527	446	525	516	560	587	562	532	532	6693
2008-2009	507	482	487	470	470	525	459	552	518	627	554	538	519	6708
2009-2010	518	531	456	518	474	495	552	522	548	550	636	547	521	6868
2010-2011	509	564	540	480	530	511	501	591	496	583	578	563	549	6995
2011-2012	509	520	533	524	504	522	508	607	549	541	572	525	550	6964
					P R O J E C T I O N S									
2012-2013	495	594	491	542	550	518	533	568	564	595	540	535	515	7040
2013-2014	489	578	561	499	569	565	529	596	528	611	594	505	525	7149
2014-2015	467	571	545	570	524	585	577	591	554	572	609	555	495	7215
2015-2016	464	545	539	554	599	539	598	645	549	601	571	569	545	7318
2016-2017	462	541	514	548	582	616	551	668	599	595	600	534	558	7368
2017-2018	461	540	511	522	575	598	629	616	621	649	594	561	524	7401
2018-2019	459	538	510	519	548	591	611	703	572	673	647	555	550	7476
2019-2020	458	536	508	518	545	563	604	683	653	620	671	605	545	7509
2020-2021	456	534	506	516	544	560	575	675	634	708	618	627	594	7547
2021-2022	455	533	504	514	542	559	572	643	627	687	706	578	615	7535

Various Grade Groupings of the Enrollment Projections

YEAR	K-4	K-5	K-6	K-7	K-8	K-9	K-12	5-8	6-8	7-8	6-9	7-9	7-12	8-12	9-12	10-12
2011-2012	2590	3112	3620	4227	4776	5317	6964	2186	1664	1156	2205	1697	3344	2737	2188	1647
2016-2017	2647	3263	3814	4482	5081	5676	7368	2434	1818	1267	2413	1862	3554	2886	2287	1692
2021-2022	2548	3107	3679	4322	4949	5636	7535	2401	1842	1270	2529	1957	3856	3213	2586	1899
2011-2012 to 2021-2022																
Change	-42	-5	59	95	173	319	571	215	178	114	324	260	512	476	398	252
Percent	-1.6	-0.2	1.6	2.2	3.6	6.0	8.2	9.8	10.7	9.9	14.7	15.3	15.3	17.4	18.2	15.3

Notes:
1. Excludes students in full-time out-of-district special education, comprehensive AVTSs, charter schools, state-owned schools, consortium-operated alternative high schools, and juvenile correctional institutions.
2. Enrollment projections beyond five years are subject to errors in the lower grades resulting from inconsistencies between actual and projected live births and should be reviewed closely.
3. Four year old kindergarten students, if any, added to K enrollments.
4. Elementary and secondary ungraded students were distributed among the grades. Therefore, enrollments by grade may differ from those reported by the local education agencies.

Sources:
1. Public School Enrollment Report (ESPE) and Pennsylvania Information Management System (PIMS)

2 Resident Live Birth file, 2010, supplied by the Division of Health Statistics, PennsylvaniaDepartment of Health. The Department of Health specifically disclaims responsibility for any analyses, interpretations or conclusions.

TABLE 3.1: PDE ENROLLMENT PROJECTIONS

Revised: 7/2012 (2011 Enrollments)

Wilkes-Barre Area SD **1-18-40-885-2**

TABLE 3.1: PDE ENROLLMENT PROJECTIONS

Retention Rates by Grade by Year

	Birth to K	Birth to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12
2007-2008 to 2008-2009	0.85642	0.81419	0.94015	0.97917	0.99156	0.99620	1.02915	1.05143	1.00388	1.11964	0.94378	0.95730	0.97556
2008-2009 to 2009-2010	0.84365	0.89696	0.94606	1.06366	1.00851	1.05319	1.05143	1.13725	0.99275	1.06178	1.01435	0.98736	0.96840
2009-2010 to 2010-2011	0.80666	0.91857	1.01695	1.05263	1.02317	1.07806	1.01212	1.07065	0.95019	1.06387	1.05091	0.88522	1.00366
2010-2011 to 2011-2012	0.73983	0.82409	0.94504	0.97037	1.05000	0.98491	0.99413	1.21158	0.92893	1.09073	0.98113	0.90830	0.97691

Rates Used in Projection Enrollments

0.73983	0.86345	0.94375	1.01645	1.05000	1.02809	1.02170	1.11772	0.92893	1.08400	0.99754	0.93454	0.98113

Average Retention Rates for All Years

0.81164	0.86345	0.96205	1.01645	1.01831	1.02809	1.02170	1.11772	0.96893	1.08400	0.99754	0.93454	0.98113

Year	Births	Year	Births	Year	Births	Year	Births	Year	Births
2002	592	2003	592	2004	614	2005	631	2006	688
2007	669	2008	661	2009	631	2010	627	2011	625
2012	623	2013	621	2014	619	2015	617	2016	615

Facility Analysis

JAMES M. COUGHLIN HIGH SCHOOL
WILKES-BARRE, PA

GENERAL DESCRIPTION

Original Construction -	1909
Additions -	1952 (Gymnasium Annex)
IBC Construction -	Construction Type IIB
Site Acreage -	2.364 acres
Gross Building Area -	179,970 +/- SF
Current Enrollment -	961
Current Grades -	9 - 12
Number of Classrooms -	46 regular
	15 special education

OVERVIEW

James M. Coughlin High School has two major building elements: the 1909 original building which has four floor levels plus a basement, and the 1952 annex wing which principally includes a new gymnasium and cafeteria as well as locker rooms for boys and girls and 16 classrooms. Coughlin is the most urban of the three existing city high schools, being located in what is Wilkes-Barre's downtown area just one block northeast of Public Square, the geographical center of the city. As a consequence, Coughlin High School does not have an adjoining football field or practice field; it does have an adjoining green space used for physical education classes.

Coughlin's original 1909 building has a very compact and simple floor plan arrangement of a single-loaded corridor wrapping an interior courtyard. Most of Coughlin's classrooms are above the PA Department of Education minimum-size standards for reimbursement at 660 SF; however the corridors at Coughlin are fairly tight, particularly when lockers are introduced as they have been. The main stair at Coughlin feels very small, and the first-floor lobby area at the foot of the main staircase is tiny for a school of this population.

The building is a storied public school in Pennsylvania, as the 1909 building is the second iteration of a public school on the site, the first being the Wilkes-Barre High School, which opened in 1890. The school's student newspaper, the Coughlin Journal, is reportedly the second oldest continuously published high school newspaper in the country.

Defining Characteristic: Geographically Separate Population Center

- As the only city high school in 1909, Coughlin would have been centrally located to its student population coming from both the north and south ends of the city, as well as those living in The Heights to the east. Within the next 20 years, during its boom years as an anthracite-mining center when its population reached 85,000 (twice what it is today) Wilkes-Barre built GAR High School to serve The Heights neighborhood and Meyers High School to serve the south end of the city.

- Coughlin was left to serve the North End and the neighborhoods to the north. In time, Plains Township was annexed to the Wilkes-Barre Area School District, and so Coughlin's territory grew to the north, with the high school evermore on the southern border of its student population. In this way, Coughlin became the city high school which has a busing population of over 90% of its students – precisely the opposite statistic from the other two secondary centers where the vast majority of students walk.
- Coughlin's location is at the edge of its geographical area; however, as a high school located in proximity to the two colleges in the downtown, as well as being near other cultural amenities in the downtown area, Coughlin has the potential to benefit from its more urban location in ways the other schools cannot. Nevertheless, if this high school were more geographically centered, it would naturally, in this day and age, find itself situated more to the north than it is currently. The Coughlin Crusaders practice football field is located at the Solomon Junior High School located in Plains Township, at a distance of two miles or so to the north.

Historical Status

- Coughlin is an imposing symmetrical neo-classicist limestone building with projecting end bays and an ornamented language of cornice projections, balustraded parapets, and keystoned flat arches sitting atop a rusticated ground floor level. The building is a substantial piece of construction by any measure, replete with architectural value. The school is not on the National Register of Historic Places.
- In contrast to the architecture of the principal exterior facade, Coughlin's interior is of lesser architectural value. The lobby space and main stair were never very generous in scale, and feel tight and very constricted. Additionally, certain original light fixtures are no longer in place, and original surfaces have been painted in school colors long ago. It is fair to say that the interiors are substantially tired.
- The main auditorium at Coughlin is a large and well configured space with a semi-circular balcony. The general treatments, however, do not compare to the auditoriums at GAR or Meyers high schools, both of which are spaces of extremely high architectural finish in their skylights and surrounding stained-glasswork.
- At this time, a simultaneous but separate Detailed Structural Evaluation was commissioned by the Wilkes-Barre Area School District to comprehensively establish the current state of deterioration of the entire roof parapet construction and the interior courtyard bearing walls and associated framing members at the roof elevation. Major deterioration of the brick bearing wall ringing the interior court is visible, and the main entrance has been scaffolded for pedestrian protection from ornamental stone elements of the main façade which are potentially unstable.

Statement of Functional Obsolescence:

- Coughlin High School is 105 years old at this time. While it continues to function as a high school in many essential ways, the level of functional obsolescence - and code obsolescence - is almost palpable. From narrow hallways to over-steep stairs with oddly low handrail heights, most of Coughlin's functional aspects feel significantly out of date. The fact that students and faculty alike can never fully circumnavigate the courtyard

without passing through the auditorium makes for a circulation pattern that laps back on itself continuously.

- While the 1952 Annex provides a great deal of additional resource to the functionality of the school, it is connected through a switchback stair tower, so that communication is up or down a half flight and then up another half flight. This arrangement has proven acceptable for 60 years. The Annex contains the gymnasium, the cafeteria and kitchen, wrestling room, home and visitors' locker rooms, school nurse's suite, and various classrooms in a three-story bar running along the length of the gymnasium. While the Annex provides athletic and dining functions as well as others, and while its classrooms are for the most part adequately sized, it is relatively small in comparison to the main building and so of limited impact on the entire educational program.
- In conclusion, Coughlin's functional obsolescence level seems quite high, with rooms of limited size in the 1909 building being resistant to new configuration. On size alone, Coughlin - which has the highest enrollment of the three high schools by roughly 15% - also has the least square footage, by tens of thousands of square feet in area. Its functional performance is per force challenging for the School District, its administrators, faculty and students.

Code Compliance:

- As with all of the 13 buildings in the Wilkes-Barre Area School District other than the relatively recently built Solomon Junior High School / Solomon Elementary School, code compliance is to an approximation of the current code. However in general terms, the District's assets have been upgraded to minimum life-safety performance. The City of Wilkes-Barre has adopted the IEBC (International Existing Building Code) and forbearance on elements of code compliance can be granted under the jurisdictional mandate of the city code enforcement office for existing conditions.
- No life-safety issue deemed of concern is left unaddressed by the Wilkes-Barre School District staff or the city's inspectors who perform regular inspections. However, the IEBC will allow areas that have not been improved to remain 'as is' until renovations of a certain scale are performed, at which time comprehensive improvements may be required either by strict code analysis per the tables, or by the code enforcement official.
- At Coughlin, areas of code non-compliance include corridor widths based on occupancy loads, stair tower widths for units of egress width, railing conditions, and in some cases smoke barriers.

ARCHITECTURAL ASSESSMENT:

<u>Exterior Envelope:</u>

Roof System:

- The roof at Coughlin has been inspected by the WBASD independent roofing consultant, Mark J. Sobeck Roof Consulting. The roof at Coughlin is conditionally rated between a 'B' and a 'C' for 48,125 SF; it is rated between a 'C' and an 'F' for 30,500 SF.
- This represents a range of conditions that range from poor to fair to good ratings for the roofing system. A program of roof replacement is described in Sobeck Consulting's

report. Some of Coughlin's roof should be replaced immediately, as this is allowing moisture into the roof edges and parapets.

Windows:

- Windows at Coughlin's original building have long ago been replaced by aluminum windows which operate poorly and have poor air infiltration seals. Generally the thermal breaks are not of high quality given their age. In some areas of the building the original wood windows still exist; where these exist, single-pane glazing and poor operation contribute to energy inefficiencies.
- At this time all windows are at least 40 years old. Where they do have double-glazing, they under-perform in energy conservation as they do not have a low-e coating, standard in modern windows. The caulking is failing throughout, and the operation of the windows is improper. The windows at Coughlin are recommended to be placed on a maintenance program for replacement, either as soon as possible or in a phased program.

Exterior Masonry:

- Coughlin's exterior masonry is generally in poor condition due to water infiltration into the wall cavities from deteriorated rubber roofing membranes. This has occurred for some time, to the extent that the Wilkes-Barre Area School District engaged a structural engineering firm in the fall of 2014, coincident with this Feasibility Study, to evaluate in a detailed way the District's secondary centers' structural conditions.
- At Coughlin, the main entrance is currently protected with an overhead scaffolding areaway. The parapet stones at the top of the limestone walls are in fact loosening as their mortar degrades. This condition applies to the greater part of the roof perimeter.
- At the interior courtyard, the structural situation is more serious in that the courtyard perimeter walls are brick-bearing walls which have been saturated over time from roof leaks. Problematically, these walls receive the floor framing - meaning beams and girders - at each floor level and the roof level. Therefore, the brick bearing walls around the courtyard are an essential part of Coughlin's entire structural system, and they are currently deteriorated to the point where softened mortar is loosening bricks. At the time of the writing of this study, the structural engineer has determined that it is prudent to shore all roof and attic framing around the courtyard walls.
- Please refer to the Detailed Structural Evaluation for further information and the professional engineer's structural conclusions and recommendations for Coughlin High School.

Interior Finishes:

Walls and Plaster:

- Coughlin has no signs of differential settlement in its interior. Because of the moisture in the walls surrounding the courtyard, plaster is water-damaged in areas of the original ceilings and on exterior walls and requires repair.

Ceilings:

- Ceilings in the original building are in poor condition regardless of finish. Ceilings in the annex are generally in good condition; however, they are showing signs of age and damage over time, and are aesthetically poor in appearance.

Flooring:

- Coughlin's original concrete floor slabs are either typically covered with vinyl composition tile (VCT). Administrative areas are carpeted.
- The Annex cafeteria is terrazzo flooring throughout. The gymnasium floor is a maple hardwood floor in fair condition.
- Offices are carpeted in the administrative areas; the auditorium is carpeted in large measure. The gymnasium has a maple floor installed after the Agnes flood. The cafeteria is VCT. Restrooms are tiled, some of it original to the building.
- Generally, in any major renovation, all flooring other than the terrazzo would be replaced; the terrazzo will need to be repaired, cracks opened and filled, and sealed.

Doors and Hardware:

- All doors in the original building and the Annex are typically thick heavy-duty wood with half-lite windows, many installed after the 1972 Flood 42 years ago.
- The classroom door hardware is sometimes of the knob type into many classrooms. Lever handles are not installed on all doors and to this extent the hardware does not comply with ADA (Americans with Disabilities Act).
- At this time, a door-by-door cataloguing throughout the building is required to fully document the code compliance and serviceability level of all doors and door hardware, however, the general condition is one of a multitude of configurations that could present a security management challenge.

Paint:

- While painting is an ongoing maintenance item for the building, generally most of the interior walls in both buildings of the school are in need of paint.

STRUCTURAL ASSESSMENT

General

- James M. Coughlin High School campus consists primarily of two building structures; original main scholastic and annex buildings. Exterior finishes are combinations of brick veneer, stone and masonry.
- The original scholastic building is a four-story structure with a basement. One-way reinforced concrete roof and floor slabs span across structural steel beams and girders which, in turn, bear on load-bearing, multi-wythe masonry exterior and interior walls. Basement floors are reinforced concrete slabs-on-grade. Exterior finishes are a combination of masonry brick veneer, stone and terra cotta.

- The annex building is a two-story structure with a partial basement. One-way reinforced concrete roof and floor slabs span across open web steel joists which, in turn, bear on structural steel girders and columns. The majority of the lower level annex floors are reinforced concrete slabs-on-grade. Exterior finishes are a combination of masonry brick veneer and stone.

Interior

- We performed a visual evaluation of the interior surfaces of the campus buildings for the purpose of providing a general condition survey of the exposed finishes, surfaces and structures. In general, the campus buildings' interior finishes are in acceptable condition.
- Interior finishes consist primarily of painted gypsum plaster wall and ceiling materials throughout the majority of the classroom, hallway and office spaces. While there is cracking of the plaster finishes indicative of minor, normal structural movements, settlements and deflections, there are no visible indications of structural deficiencies. However, continued monitoring of these areas for further water infiltration is recommended.
- Visual evaluation of the interior building structural steel and concrete elements was possible in limited locations; in the annex basement, annex gymnasium and original scholastic building attics. In general, the structure condition varied by location. The structural elements exhibited minimal cracking, spalling, deflection or corrosion in the annex building and lower floors of the original scholastic building. However, the roof and attic structure of the original scholastic building, particularly surrounding the interior courtyard areas, exhibited severe deficiencies; water infiltration, deterioration of the load-bearing brick walls and mortar joints and corrosion and delamination of structural steel framing members. These deficiencies were deemed to be critical to immediate occupancy of the school and repair and reinforcement of the items was performed to stabilize the structure. Ongoing monitoring of the building conditions is in place for the short-term occupancy of the building.

Exterior

- The exterior finishes of the original scholastic building are in poor to fair condition. The interior deficiencies of the interior courtyard area walls are evident on the exterior faces as well; water infiltration, load-bearing brick cracking, spalling, loose brick and deterioration of mortar joints. Steel lintels over window openings are corroded and delaminating to the extent of displacing the brick face above and at either end of the opening. These deficiencies were included in the evaluation of the interior deficiency items found in regards to occupancy and were repaired and reinforced in combination with to stabilize the structure. Ongoing monitoring of the building conditions is in place for the short-term occupancy of the building.
- The remainder of the original scholastic building façade's stone facing and parapets revealed several deteriorating stone panel connectors, loose grout and localized spalling.
- The exterior finishes of the annex building are in good condition; minimal deterioration of masonry and stone joints and no cracking indicative of foundation settlement or movement.
- Due to the age and condition of the original scholastic structure, renovation is not considered feasible.

MECHANICAL ASSESSMENT:

The heating system includes low pressure steam boilers, air handlers, unit ventilators, radiators, and fin tube.

The boilers are a firebox – fire tube design low pressure steam (15 psi) with duel fuel natural gas and oil burners. The boilers were manufactured in 1990, are approximately 25 years old, and are near the end of their service life. The boilers provide steam to the Main building and the Annex.

As noted in a letter provided to our office by the school district "the bulk oil storage tank was replaced in 1995 along with safety devices and is in compliance with EPA and DEP regulations". The oil tank should be double wall constructed and provided with a leak detection system". The capacity of the tank was not included in the letter for the storage tank at this site. During the walk through a leak detection system could not be identified, and the type of tank could not be confirmed.

There are two air handlers with steam coils located on the ground floor of the Main building. The equipment appears original to the building and the systems do not appear operational.

Heating System:

- The heating system consists of three (3) low pressure steam boilers manufactured by Superior Boiler Works, Model: MS3-X-1324. The burner was manufactured by Iron Fireman with a minimum firing rate of 5000 MBH and a maximum firing rate 15000 MBH with natural gas; and a minimum firing rate of 33 GPH on low fire and a maximum of 100 GHP on oil.
- The boilers provide steam for various types of heating equipment, air handlers, unit ventilators, heating coils, cabinet heater, cast iron radiators and fin tube etc.
- Condensate receivers with integral pumps are located in the lower level of the main building. These units pump the condensate back to the boiler feed unit located in the boiler room.
- The boiler feed unit is interlocked with the boiler operation.
- An automatic chemical feed unit has been installed and connected to the boiler make-up water line to the boiler feed receiver.
- The condensate receiver for the boiler feed unit was replaced then reconnected to the existing pumps and control panel.
- Emergency boiler off-switches are not installed at boiler exits.
- Combustion air for the boilers appears to be inadequate. Operable windows appear to be the only means of providing outdoor air.

Cooling:

- Central cooling was not provided for this building.

<u>Main Building:</u>

Classrooms - Ground Floor:

- Classrooms are heated with steam radiators and unit ventilators with steam coils. There are both floor and ceiling mounted unit ventilators installed on this floor. Ventilation for these classrooms is provided by the unit ventilators and operable windows.

Classrooms – Upper Floors:

- The majority of classrooms are heated with steam radiators. Steam fin tube was also provided in some classrooms.
- The original design incorporated air handlers located on the ground floor with ductwork risers located in the interior walls. Registers were installed to provide heating and ventilation for the classroom. This system may not be operational; during conversations with the personnel at the facility, they noted the absence of air flow from the registers during the school year.
- Ventilation is provided via operable windows for classrooms located along the exterior walls.
- Window air conditioner units (a/c units) have been placed in the third floor computer labs to help alleviate the additional heat generated from the computers. When the window a/c units are operating the classroom door and windows are closed thereby eliminating any natural ventilation to the classroom.
- Lab hoods located in the fourth floor chemistry labs appear to have been installed in the late fifties to early sixties and are fabricated from wood with glass sliding doors. The lab hood doors do not have seals, are beyond their useful life expectancy, and should be scheduled to be replaced. The exhaust fan for the hoods is operational. T he fan performance and amount of exhaust being provided could not be determined and should be should be field verified via a balancing report.
- The seating is arranged so that the backs of the student's seats are close to the radiators. The steam radiators do not have covers and the heating elements are exposed. The radiators should be provided with covers to alleviate the possibility of accidental burns from the hot surfaces.
- Steam and condensate piping is exposed and should be insulated. At a minimum the piping should be insulated to approximately eight (8 lf) feet above the finish floor.

Library:

- The original design incorporated air handlers located on the ground floor with ductwork risers located in the interior walls providing heat and ventilation air to the Library. Wall mounted registers were installed to distribute supply air in the Library. This system may not be operational because in conversations with personnel at the facility, they noted the absence of air flow from the registers.
- The computer server for the building is located in the Library. Currently the heat from the server is rejected to the space via a box fan. Noted during the survey of the facility was that the server shuts down frequently due to the temperature in the room exceeding the server's operating range.

Server Room:

- In conversations with the IT department; it was noted that there is an issue with heat build-up in the server room. When the room temperature exceeds the operating range

of the server, the equipment will shut down. T his shut down disrupts the phone service and computer lab equipment.
- A ductless split type air conditioner should be considered for these areas to help alleviate this problem.

Auditorium:
- Steam radiators and air handling units provide heating and ventilation for this room. The supply air is ducted and is supplied to the room with registers mounted in the walls near the ceiling. The return air is ducted back to the air handlers. At the time of both surveys of this building, this equipment was not operational and appeared to be non-functional. Additionally, ventilation for rooms with high occupancies should utilize CO2 detection to modulate the outdoor air dampers. Where possible energy recovery should be provided. As currently installed the system is energy inefficient.

Admin Area:
- Steam radiators provide heating for the offices.
- Window air conditioners have been installed in the Principal, Main, and Guidance Offices.
- These areas are not adequately ventilated, as operable windows are the only means of introducing outdoor air for these rooms. As noted above, when the window units are operating the windows will be closed.

Industrial Arts Area: Woodworking Shop
- Unit ventilators provide heating and ventilation for the shop areas. Air is ducted to registers mounted in the ductwork located in the ceiling area. Cooling was not provided in this area.
- The Wood Shop is furnished with a central dust collection system. The dust collector is located in the wood shop area. Dust from this system is covering the computers in the shop area. The dust collector should be located outdoors or in a separate room.
- A paint hood with an exhaust fan was furnished for the wood shop.

Toilet Rooms:
- Exhaust for the Boys and Girls Toilet Rooms is by means of wall grilles ducted to exhaust fans located in the attic area. The exhaust for these areas appears to be insufficient for the amount of fixtures in the toilet rooms.
- Some of the Faculty Toilet Rooms have individual ceiling cabinet fans ducted to the exterior of the building. This is a typical installation for the smaller toilet rooms.
- Some of the Faculty-Admin Toilet Rooms do not have any exhaust systems located in their areas. These areas do not comply with the current requirements of the International Mechanical Code (IMC).

Janitor Closets:
- An exhaust system was not installed for the Janitor Closets. These areas do not comply with the current requirements of the International Mechanical Code.

Corridors:

- Wall mounted steam radiators provide heating for the corridors.
- There is no mechanical ventilation in the corridor areas.
- The steam radiators do not have covers there by exposing the heating elements. The radiators should be provided with covers to eliminate the possibility of accidental burns from the hot surfaces.
- Steam and condensate piping is exposed and should be insulated. At a minimum, the piping should be insulated to approximately eight (8 lf) feet above the finish floor.

Emergency Generator: (ground floor of existing building)

- The outdoor air required for combustion and make-up air intended for the operation of the emergency generator appears to be inadequate.

Automatic Controls:

- A pneumatic type control system was installed for the High School. The system consists of an air compressor mounted on a steel receiver and a pressure regulator. At the time of the survey a refrigerant air dryer was not installed for the pneumatic control system. This will hinder the ability of the controls to maintain temperature.
- A DDC Facility Management System was installed at this location in 2002 to interface with the existing pneumatic system. DDC systems have a service life of 15-16 years. This system is 12 years old and is approaching the end of its useful service life. This system includes:
  - Carbon dioxide (CO2) control for the Gym
  - Occupancy and Un-occupancy scheduling for the HVAC systems

<u>Annex:</u>

Classrooms:

- Classroom unit ventilators with steam coils were installed for the majority of classrooms. A gravity relief system to alleviate excessive building pressurization was provided. These classrooms have operable windows to provide ventilation during mild weather.
- Steam convectors were provided for a few of the classrooms. Operable windows are the only means to provide ventilation for classrooms with steam convectors.

Cafeteria/Kitchen:

- An air handler located on the ground floor provides heating and ventilation for these areas. The air is ducted to the rooms and distributed to the rooms by means of sidewall registers installed near the ceiling.
- The kitchen hoods do not extend beyond the extent of cooking equipment beneath the hoods. This installation does not comply with the current IMC.
- Two kitchen hoods have been provided for the cooking equipment and are ducted to roof mounted exhaust fans. A fire suppression system was installed for one of the kitchen hoods with nozzles located above the range and fryers.

- A dedicated make-up air unit for the kitchen exhaust was not provided. The air from adjacent rooms (i.e. Cafeteria, Gym, etc.) provides the make-up air for the kitchen exhaust.
- The air handler unit for these areas provides heating and ventilating only. Air conditioning was not provided for these areas.
- This area appears to be to be under ventilated for both occupancy and for kitchen hood exhaust requirements.

Gymnasium:

- Three air-handling units with integral steam coils provide heating for this area. Two air handlers have outdoor air intakes that provide ventilation for the Gymnasium. Discharge hoods connected to the air handlers distribute the air to the space. Excess air is relieved through gravity hoods. During discussions with maintenance and service personnel, it was noted that the large air handler located near the kitchen has a damaged steam heating coil that needs to be replaced.

Nurse's Area:

- Wall mounted convectors with an integral steam coil provide heating for this area. Operable windows are the only means to provide ventilation.

Boys and Girls Toilet and Wash Areas:

- A ducted exhaust system was installed to provide exhaust for these areas and appears to be inadequate for the rooms. Direct ventilation to the space was not provided.

Office, Teachers Room and Toilet:

- An exhaust system was installed for these areas and appears to be insufficient. Direct ventilation to the space was not provided.

Lockers/Showers/Toilet Areas:

- Exhaust is provided for these areas and appears to be inadequate.
- Direct ventilation to the space was not provided.

Physical Director's Office/ Weight Room:

- Direct ventilation to the space was not provided.

Wrestling/Weight Room:

- An air handling unit with integral steam coil provides heating for this area. The air handler with an outdoor air intake was installed to provide conditioned air and to ventilate the rooms. The amount of ventilation could not be determined and should be field verified via a balancing report.

Kitchen Refrigeration Equipment:

- Compressors for the Kitchen refrigerator and freezer are located on the ground floor underneath the Kitchen area. Some compressors are water cooled while others appear to be air cooled. The water is piped from the domestic water line to the cooling coil on

the compressor and then dumped as waste water to the sewer system. The air cooled compressors reject their heat to the room. No mechanical air movement was apparent to remove the heat from the compressors. There is no refrigerant monitoring of the space in the event of a refrigerant leak. Air cooled equipment should be considered when this equipment is scheduled to be replaced.

Corridors/ stairwells:

- Steam baseboard provides heating for the corridors.
- There is no mechanical ventilation of the corridor areas.
- Wall mounted steam convectors provide heating for the stairwell.
- The steam radiators do not have covers. The heating elements are exposed. The radiators should be provided with covers to reduce the possibility of accidental burns from the hot surfaces.
- Steam and condensate piping is exposed. At a minimum the piping should be insulated to approximately eight (8 lf) feet above the finish floor.

PLUMBING ASSESSMENT:

Domestic Water Service:

- A 3" domestic water service enters into the basement Mechanical Equipment Room in the main portion of the building.
- A 3" domestic water service enters into the basement Utility Room in the annex section of the building.
- Both domestic water services are metered and have reduced pressure backflow preventers. The piping is insulated and in poor to fair condition.

Domestic Water Heaters:

- The domestic hot water for the main portion of the building is produced by a 120 gallon electric water heater located in the basement Mechanical Equipment Room. The water heater serves toilet rooms, sinks, and lab sinks. There are no recirculation lines on this water heater therefore taking a long time for hot water to reach the fourth floor.
- The domestic hot water for the annex portion of the building is produced by two (2) Teledyne Laars boilers. The domestic hot water is piped to a 2,000 gallon Patterson Kelley domestic hot water storage tank. The hot water is recirculated. The domestic hot water serves toilets rooms, showers, kitchen, etc. in the annex section of the building.
- A 10 gal electric water heater located above the ceiling above the toilet room in the boiler room serves that toilet room.

Natural Gas Service:

- The natural gas service for the main building enters the basement through the Mechanical Room. The meter is located in front of the building on Washington Street. The service is piped to the emergency generator in the basement's Electrical Equipment Room. It also serves Sciences, Chemistry, Physics, Biology labs on the fourth floor; however, the service to the fourth floor has been terminated due to leaks.

- The natural gas service for the annex enters the basement Utility Room. The meter is located in front of the building on Washington Street. The service is piped to the domestic hot water boilers and the kitchen.
- An additional natural gas service enters the rear of the boiler room to serve the heating systems boilers. The gas meter is located outside the boiler room.

Sanitary & Storm Sewers:

- The sanitary and storm piping in the main and annex building exits by way of the front of the buildings and connect to the sewer system in Washington Street. The piping is cast iron and some PVC. It appears to be in good condition.

Kitchen:

- The kitchen is a full service kitchen. The fixtures appear to be in good condition. There are two grease traps, one located in the basement and one situated under the (3) compartment sink in the kitchen. The cooking appliances are gas fired. One side of the kitchen exhaust hood has a suppression system.

Plumbing Fixtures:

- The plumbing fixtures and trim appear for the most part to be original fixtures. The fixtures should be replaced to meet allowable flow rates and consumption for plumbing fixtures and fixture fittings set by the International Plumbing Code. The fixtures should comply with the American with Disabilities Act.
- Approximately 50% of the laboratory sinks on the fourth floor do not work.

Fire Protection:

- A standpipe system with four (4) hose valves, racks, and hoses are located on each floor of the main building. The standpipe system has exterior fire department connections on each side of the main building. The system appears to be original and beyond its life expectancy. The system is fed from a separate line from Washington Street and is not metered.
- The annex section of the building has no fire protection.

ELECTRICAL ASSESSMENT:

Incoming Electrical Service:

- The existing electrical service is 120/208V, 3PH, 4W and rated for 1600 Amps. Service is fed from a PPL vault mounted transformer. The most recent maximum demand occurred between December 2013 to January 2014 which was 186 KW and is approximately 516 amps. Based on PP&L's maximum demand readings the building is only using 32% of its designed capacity which will allow room for future growth.

Existing Power Distribution:

- The Existing General Electric 120/208V, 3PH, 4W, 1600 Amp rated Main Distribution Panel (MDP) is over 60 years old. The MDP is outdated and is at the end of its useful life and should be replaced. The ability to find replacement parts for the panel is doubtful.
- The existing subpanels are 120/208V, 3PH, 4W, and are made by various manufacturers such as Westinghouse, Tumbull Electric, Square D and General Electric. Westinghouse and Tumbull Electric are no longer made and have been absorbed by Cutler Hammer and GE respectively. The ability to get parts and additional breakers are doubtful and these panels should be replaced.

Emergency Lighting:

- The existing emergency lighting system is supplied by a 30 KW natural gas emergency generator. It cannot be determined if the existing emergency lighting is adequate without testing the generator under load conditions.

Emergency Generator:

- The natural gas 30 KW emergency generator is approximately 40 years old. It serves the emergency lighting, boilers and pumps. Due to age and the availability of spare parts (or lack thereof) the generator should be considered for replacement.

Fire Alarm System:

- The fire alarm system was recently replaced with a new Silent Knight system and appears to be in good working order. The fire alarm pull stations and horns/strobes located in gym should have wire guard protection to prevent breakage from basketballs, volleyballs, etc.

Lighting General Areas:

- Lighting in corridors, offices, etc. were upgraded approximately eight years ago with electronic ballasts and energy saving T8 – 32 watt fluorescent lamps. The lighting in these areas appears to be adequate. Yellowing lenses should be replaced to improve fixture efficiency.

Typical Classroom:

- Lighting in the classrooms was upgraded approximately eight years ago with electronic ballasts and energy saving T8 – 32 watt fluorescent lamps. Lighting levels in classrooms appear to be adequate. Any yellowing lenses should be replaced to improve lighting fixture efficiency.
- The classroom lighting fixtures are controlled by a wall switch and ceiling mounted occupancy sensors for energy savings.
- Most classrooms don't appear to have an adequate quantity of general purpose receptacles. Additional receptacles should be added if local power panels can accommodate the added circuits.

Master Clock System:

- The existing master clock system does not appear to be working and should be replaced.

Telephone and Intercom Systems:

- The telephone system was recently replaced with a voice over internet protocol (VoIP) system and is adequate.

Auditorium Stage Lighting and Sound System:

- The Stage lighting system is approximately 40 years old and should be replaced with a new digital dimming system. Stage and border lighting should be replaced with LED fixtures for added energy savings.
- The sound system is old and should be upgraded to current technology.

Data System:

- The main distribution frame (MDF) is not properly cooled. During warmer months the buildup of heat causes the system to shut down. During shut down the phone system is inoperable because it is tied into the MDF.
- Classroom data jacks appear to meet the district's needs.

Paging System:

- The paging system is old and should be replaced due to the lack of spare parts in the event of future electrical problems.

Clock System:

- Provide a new clock system.

Security System:

- The old style VCR should be considered for replacement with a DVR system.

SITE ASSESSMENT:

Site Conditions:

- General Description:
  - Coughlin High School is located in downtown Wilkes-Barre within the historic commercial center of the city. The existing school is located along North Washington Street, in the first block off of East Market Street between East Union Street and Butler Lane. The school occupies land on both the west and east sides of North Washington Street with the west side comprising approximately 3.0 acres accommodating the school building, walks, court yards, service drives, parking and a 8/10 acre lawn outdoor open space used for physical education and activities. The parcel on the east side is ½ acre spanning the width of the block between North Washington Street and State Street, is completely asphalt paved

and used as a staff parking lot. The overall area is generally flat with the building's first floor elevation established a few feet above the adjacent grades along North Washington Street.

- The topography of the site is generally flat.

- The site falls within a C-3, Central Commercial District in Wilkes-Barre City where School Use is not a permitted use. While the property is currently under a school use, a Special Exception will likely be required from the zoning hearing board to allow the construct of a new School Use in the C-3 District.

- The property is protected from flooding by the Wilkes-Barre levee system managed by the Luzerne County Flood Protection Authority. The site is in an area identified as "Other Flood Areas" on the Luzerne County Flood Insurance Rate Map and is noted as being protected from "the 1% annual chance or greater flood hazard by a levee system that has been provisionally accredited.".

- Vehicular Access
  - Vehicular access to the proposed High School will be from East Union Street to the north and South Washington Street from the east. An existing parking lot at the southwest corner of East Union and North Washington Street can be expanded through property purchase to increase the availability of parking on the site.

- Pedestrian Access
  - The center city of Wilkes-Barre has a highly developed urban sidewalk network extending throughout the city. The Coughlin Site is within walking distance of significant portions of the north end of Wilkes-Barre and the center city area.

- Utilities
  - Utility services such as gas, water, electric, tele-communications and storm are available from the nearby streets.
  - A sanitary sewer main is located near East Union Street and South Washington Street.

- Proposed Site Plan
  - The proposed site plan positions the new high school building in the in the same general area as the existing high school, but extends the building to East Union Street, eliminating the existing athletic field in this location. The project construction roughly covers the entire parcel.
  - Site storm drainage will be managed with detention and infiltration facilities incorporating best management practices. Storm flows discharged from these facilities will be directed to existing storm drainage systems in the adjacent city streets.

CONSTRUCTION COST ESTIMATE

Opinion of probable cost incorporating aforementioned site conditions: $950,000.00

Estimate does not include the following:

- Design and Engineering Fees

ELMER L. MEYERS JR. / SR. HIGH SCHOOL

WILKES-BARRE, PA

GENERAL DESCRIPTION

Original Construction -	1930
Renovations -	1973-75
IBC Construction -	Construction Type IIB
Site Acreage -	7.731 acres
Gross Building Area -	260,600 +/- SF
Current Enrollment -	893
Current Grades -	7 - 12
Number of Classrooms -	56 regular
	15 special education

OVERVIEW

Elmer L. Meyers High School is intact in its original configuration with no major additions to the original 1930 building. The high school sits on an irregular site at the intersection of two non-perpendicular streets. In response to the site, the school orients its main entrance directly to the intersection, with two major classroom wings located to either side of main entry and travelling down each street.

Common functions such as gymnasium and cafeteria, and specialized classrooms for the industrial arts, domestic arts and sciences are located to the interior of the site, in an arrangement around two courtyards. The locker rooms and other athletic facilities, such as the wrestling room, as well as a few classrooms which comprise the school's STEM classroom areas, and the band room, are located at the basement level -- which is also the level of the attached Wilkes-Barre Memorial Stadium.

The stadium is the Wilkes-Barre Area School District's main football field. It has an artificial turf surface and a surrounding track also with artificial surface. The track does not meet the contemporary requirements for PIAA track configuration. As of 2011, an entire side of the stadium bleacher assembly -- what was formerly the 'home' side -- has been demolished due to structural deterioration.

Meyers High School is situated in the heart of South Wilkes-Barre, a neighborhood that was largely developed in the first decade of the 20th century and which saw growth well into the 1950s with new subdivisions, down to the boundary of Hanover Township and against the Susquehanna River.

Defining Characteristic: Geographically Separate Population Center

- Just as GAR High School is tightly linked to its hilltop neighborhood, Meyers has become in its 85 years of existence an integral part of the identity of South Wilkes-Barre. This is the largest block of land in the city identified as a unified neighborhood, being that portion

of the south end of the city that lies to the west of South Main Street and south of the downtown, all the way to the southern boundary with Hanover Township. The geographical service area for Meyers High School is an area roughly two miles in length by ¾ of a mile in width. In terms of its topography, South Wilkes-Barre is the flat part of the city along the Susquehanna River. Currently over 90% of Meyers students walk to the school.

Historical Status

- Meyers High School is an architecturally monumental three-to-four story brick-clad structure, in the tradition of the early 20th century's Neo-Classical Revival Style. The school's facades feature giant limestone orders -- essentially three-story columns with ornate Corinthian capitals and architraves. The substantial character of its materials and its rational floor plan arrangements give the building a character that qualifies it as an extraordinary example of Early-20th Century American public school construction at a grand civic scale in an urban environment. The school is not on the National Register of Historic Places.
- In particular, the main entry, marble-clad entrance foyer, and marble-clad staircase, form a sequence of spaces that is at a grand public scale. Being the newest secondary school of the three in the city, the interior scale and dimension of Meyers is the most generous. Another space of note is the school's auditorium. With a seating capacity of 1,650, the Meyers auditorium has both main level and balcony level, accessed from main hallways at each level.
- The ceiling of the space boasts an enormous stained-glass skylight containing the shields of 48 of the 50 states in the United States of America. Additionally, stained-glass windows at the perimeter of the auditorium carry the names of giants of learning, philosophy, mathematics, science, literature, and history. The auditorium space is a remarkable public space with a viable egress capacity in terms of modern code but a number of code deficiencies in terms of railings and sloped floor areas.
- Meyers High School is in all respects a building of imposing monumental character. However, the exterior masonry facades have experienced deterioration due to water infiltration through the roof parapets over the years. This has occurred to the extent that numerous large glazed terra-cotta units high on the exterior walls are 'spalling,' or shedding the face of the unit, in such a way that some portions of masonry have fallen to the ground and present a hazard to the building occupants.
- In conjunction with this report, an evaluation and estimate of the required remediation has been prepared. It is not apparent that the cost to correct all façade masonry deficiencies will be economically feasible.

Statement of Functional Obsolescence:

- Meyers is 85 years of age, and the building has been inundated twice by the Susquehanna River -- in 1936 and in 1972. The Wilkes-Barre School District has been maintaining the building's life safety systems, its code compliance level, and its general functionality with ongoing attention and improvements to the building systems.
- At this time however, an evaluation of the building's functional obsolescence could be described as advancing, if not advanced. For example, while the original handrails are

monumental in character at the grand staircase, they are not even in the spirit of a modern railing system; the handrail grip is oversized by contemporary code requirements, and the height of the railing is also out of range. Guard rails do not exist and are not readily implemented on this stair. While not unsafe, and while monitored closely by the Wilkes-Barre City Code Enforcement Office, the functionality of all aspects of Meyers High School's physical plant continually grows farther away from the standard configurations for circulation routes, egress paths, and ADA requirements that are taken for granted and easily obtained in newer facilities.

- For the third-floor science halls, the second means of egress is an enclosed exterior fire escape open to the elements. While most egress routes are in compliance for length of travel (the school has numerous stair towers and exit corridors) the handrail/guardrail assemblies are often not in full compliance with modern code. New curriculum-specific classroom functions have been introduced over time into spaces that were not originally designed for the new purpose.
- Importantly, all of the original standard classrooms at Meyers in the wings along Carey Avenue and Hanover Street are well under 660 SF, the current minimum size required for PA Dept. of Education Reimbursement, per PlanCon Part A. These classrooms are not easily made larger because corridor walls are so well-constructed, with brick wainscoting and glass display cases that limit where new doors can be placed. It is actually the very nature of the school's substantial construction that works against it and makes the building resistant to change.
- Additionally, the complex triangular geometry that was developed in response to the site makes for unique configurations in certain parts of the building that further constrains reshaping the floor plan. It is important to note that while the school's most public facades received new windows after the 1972 Agnes Flood, the windows facing the stadium and the windows ringing the interior courtyards are original wood sash and/or steel sash windows with single-pane glazing.
- While these outdoor spaces are beneficial in that they act as large light-wells for interior classrooms, they also fix the floor plan in a kind of a constrained doughnut shape, or torus.
- In conclusion, the functional performance of Meyers has been acceptable by virtue of careful and thoughtful space utilization. The functional layout developed so stoutly in the 1930s now cannot be expected to provide the same level of amenity as a contemporary high school with more spaces sized according to modern use. At this point in time, the curriculum offerings at Meyers conform themselves to the building, as the building itself does not easily conform itself to new purposes.

Code Compliance:

- As with all of the 13 buildings in the Wilkes-Barre Area School District other than the relatively recently built Solomon Junior High School / Solomon Elementary School, code compliance is to an approximation of the current code. However, in general terms, the District's assets have been upgraded to meet required life-safety standards. The City of Wilkes-Barre has adopted the IEBC (International Existing Building Code), and some forbearance on elements of code compliance may be granted under the jurisdictional mandate of the city code enforcement office for certain unusual existing conditions.
- No life-safety issue deemed of concern is left unaddressed by the Wilkes-Barre School District staff or the city's inspectors who perform regular inspections. However, the IEBC

will allow areas that have not been improved to remain 'as is' until renovations of a certain scale are performed, at which time comprehensive improvements may be required either by strict code analysis per the tables, or by the code enforcement official.

- At Meyers, areas of code non-compliance include rated separations of stair towers, some of which are surrounded by fire-rated glass lights, and some of which are open without benefit of smoke barrier. Other issues include stair tower widths for units of egress width, and handrail/guardrail conditions. The number of exits and the configuration of the egress routes are in good order in their length of travel and absence of dead-end corridors.

ARCHITECTURAL ASSESSMENT:

Exterior Envelope:

Roof System:

- The roof at Meyers has been inspected by the WBASD independent roofing consultant, Mark J. Sobeck Roof Consulting; the roof at Meyers is conditionally rated an 'A'.
- This represents the highest rating for roofing systems. The roof was replaced and all roof parapets were removed at all roof perimeter locations, as all parapets were in a state of deterioration. The new EPDM membrane was rolled over the top of the remaining roof edge and vertically lapped down 12" to termination on the main building facades.

Windows:

- Windows at Meyers generally have poor air infiltration characteristics, poor operating functionality, and sub-standard insulating values compared to modern windows. Windows at Meyers fall within the three following categories:

    1) Large monumentally sized single-hung aluminum replacement windows with transoms and insulating glass, installed after the 1972 flood.
    2) Original monumentally sized wood frame and sash single-hung windows with transoms and single glazing.
    3) Original steel-sash windows with single glazing.

- At this time all windows are at least 40 years old. Where they do have double glazing, they under-perform in energy conservation performance as their glazing does not have a low-e coating, standard in modern windows. The caulking is failing throughout and the operation of the windows is improper. The windows at Meyers are recommended to be placed on a maintenance program for replacement.

Exterior Masonry:

- As stated above, Meyers' exterior masonry is in a state of deterioration, in some cases severe. The boiler house in particular has an entire brick wall that is bowing out of plane and where the mortar is structurally deteriorated.
- On the main public facades along Carey Avenue and Hanover Street, spalling, cracking, and breaking of large glazed terra-cotta units is progressing across all portions of the facades. Certain areas are currently cordoned off with overhead protection for public safety.
- Please see the Detailed Structural Evaluation Report for the Secondary Centers for further recommendations.

Interior Finishes:

Walls and plaster:

- Meyers is remarkably devoid of signs of differential settlement on its interior. Where degradation of the plaster has occurred in ceilings and on exterior walls, it is in areas of localized water and/or moisture infiltration mostly from roof conditions. Generally, this area does not present large scope items.

Ceilings:

- Some areas such as the library and certain classrooms and offices have received a suspended acoustical ceiling installation for acoustical purposes or to achieve a better distribution of lighting. Typically, where these have been installed, the ceilings are of an age where tiles are deflected and in need of replacement. In a building with no central air, these ceiling systems have been prone to absorbing humidity. Grids are also showing signs of age.

Flooring:

- Meyers has terrazzo flooring throughout its public corridors, and vinyl composition tile (VCT) typically in its classrooms and laboratory spaces. Offices are carpeted in the administrative areas; the auditorium is carpeted in large measure. The gymnasium has a maple floor installed after the Agnes flood. The cafeteria is VCT. Restrooms are tiled, some of it original to the building.
- Generally, in any major renovation, all flooring other than the terrazzo would be replaced; the terrazzo will need to be repaired, cracks opened and filled, and sealed.

Doors and Hardware:

- All doors are typically thick heavy-duty wood with half-lite windows, the large majority of which are original to the building. Where new locksets have been installed, they have been installed after the 1972 flood.
- Some of the doors into stair towers are steel doors with fire-rated glass half-lites, original to the building. They do not meet contemporary requirements for rated fire-doors. Closure is not always complete.

- The door hardware is still of the knob type into many classrooms. Lever handles are not installed on all doors and to this extent the hardware does not comply with ADA (Americans with Disabilities Act).
- At this time, a door-by-door cataloguing throughout the building is required to fully document the code compliance and serviceability level of all doors and door hardware. However, the general condition is one of a multitude of configurations that could present a security management challenges.

Paint:

- Most unfortunately, in a misguided effort to address student morale, entire areas of original brick wainscot walls that line the hallways were painted over in the school's royal blue color. This destruction of the original aesthetic of the corridors now presents a tawdry and unkempt aspect to the building, where a noble material was defaced in a garish and inappropriate application. This should be remediated in order to bring dignity back to the interiors. Generally, all walls in the school are in need of paint.

STRUCTURAL ASSESSMENT

General

- Elmer L. Meyers High School campus consists primarily of seven building structures; main scholastic, auditorium, gymnasium, cafeteria, science, shops buildings and boiler house. Exterior finishes are combinations of brick veneer, stone, terra cotta and masonry.
- The main scholastic building is a three-story structure with a basement. One-way reinforced concrete roof and floor slabs span across structural steel beams and girders which, in turn, bear on structural steel columns. Basement and foundation walls are reinforced, cast in place concrete continuous wall footings and spread column footings. Basement floors are reinforced concrete slabs-on-grade. Exterior finishes are a combination of masonry brick veneer, stone and terra cotta.
- The auditorium building is a two-story structure with no basement. One-way reinforced concrete roof and floor slabs span across structural steel beams and girders which, in turn, bear on structural steel columns. Balcony framing within the auditorium space matches the perimeter floor framing. Foundation walls are reinforced, cast in place concrete continuous wall footings and spread column footings. The auditorium floors are reinforced concrete slabs-on-grade. Exterior finishes are a combination of masonry brick veneer, stone and terra cotta.
- The gymnasium building is a partial two-story structure with a basement. One-way reinforced concrete roof and floor slabs span across structural steel trusses which, in turn, bear on structural steel columns. Classroom floors extend about one third of the length of the gymnasium roof/ceiling. Basement and foundation walls are reinforced, cast in place concrete continuous wall footings and spread column footings. Basement floors are reinforced concrete slabs-on-grade. Exterior finishes are a combination of masonry brick veneer, stone and terra cotta.
- The cafeteria building is a one-story structure with a clerestory and basement. One-way reinforced concrete roof and floor slabs span across structural steel trusses which, in turn, bear on structural steel columns. Basement and foundation walls are reinforced, cast in

place concrete continuous wall footings and spread column footings. Basement floors are reinforced concrete slabs-on-grade. Exterior finishes are a combination of masonry brick veneer, stone and terra cotta.

- The science building is a four-story structure with an at-grade basement housing the boy's and girl's pools. One-way reinforced concrete roof and floor slabs span across structural steel beams and girders which, in turn, bear on structural steel columns. Basement and foundation walls are reinforced, cast in place concrete continuous wall footings and spread column footings. Basement floors are reinforced concrete slabs-on-grade. Exterior finishes are a combination of masonry brick veneer, stone and terra cotta.
- The shops building is a three-story structure with a partially subterranean basement. One-way reinforced concrete roof and floor slabs span across structural steel beams and girders which, in turn, bear on structural steel columns. Basement and foundation walls are reinforced, cast in place concrete continuous wall footings and spread column footings. Basement floors are reinforced concrete slabs-on-grade. Exterior finishes are a combination of masonry brick veneer, stone and terra cotta.
- The boiler house is a two-story structure with no basement. One-way reinforced concrete roof and floor slabs span across structural steel beams and girders which, in turn, bear on structural steel columns. Balcony framing within the auditorium space matches the perimeter floor framing. Foundation walls are reinforced, cast in place concrete continuous wall footings and spread column footings. The floors are reinforced concrete slabs-on-grade. Exterior finishes are a combination of masonry brick veneer, stone and terra cotta.

Interior

- We performed a visual evaluation of the interior surfaces of the campus buildings for the purpose of providing a general condition survey of the exposed finishes, surfaces and structures. In general, the campus buildings' interior finishes are in acceptable condition.
- Interior finishes consist primarily of painted gypsum plaster wall and ceiling materials with suspended acoustic tile ceilings throughout the majority of the classroom, hallway and office spaces. While there is cracking and spalling of the plaster finishes indicative of minor, normal structural movements, settlements and deflections, there are multiple locations where water infiltration has caused damage including cracking, spalling, sagging and bubbling of the plaster finish. While not indicative of failure to structural elements beneath, long term exposure to moisture can deteriorate framing, beams and columns with rot, corrosion and loss of section to the degree of reducing structural load-carrying capacities. That being said, areas where such water damage was noted to the ceiling and wall finishes did not present additional visual clues indicating structural failure of the hidden structural elements. However, continued monitoring of these areas for further water infiltration is recommended.
- The main central stair has a vaulted plaster ceiling and marble wall tile as well as marble stairs and railings. The general condition of the central stair plaster finishes is good but there are some areas where water infiltration has caused damage including cracking, spalling, sagging and bubbling of the ceiling plaster finish. The marble wall tile has shifted in multiple locations throughout the stair shaft; pulling away from the backup, offsetting, stepping and walking. In some instances the tile support from the pieces below is becoming minimal and could lead to a section falling to the floor. It is recommended that the marble tiles be realigned and reset in the near future.

- Visual evaluation of the interior building structural steel and concrete elements was possible in limited locations; basement, gymnasium, main scholastic attics and auditorium. In general, the structure was in good condition; exhibiting minimal cracking, spalling, deflection or corrosion. No visual indicators were seen to infer that the original load-carrying capacities of the structure have been reduced.

Exterior

- The exterior finishes are in poor to fair condition; exhibiting some deterioration of veneer mortar joints, cracking and displacement due to building settlement or thermal movement and no visible failures of structural elements. However, localized areas and specific conditions have deteriorated extensively and require attention in the immediate future.
- The clay brick, stone and terra cotta veneers, headers, sills and cornices of the campus need to be repointed, sealed or replaced to prevent water infiltration and further deterioration of the mortar joints.
- Terra cotta opening headstones are cracking and spalling off, dropping pieces of material to the ground below.
- There is minor step cracking of the veneer at multiple locations around the campus due to settlement. The areas appear to have stabilized but should continue to be monitored for additional movement.
- The brick walls of the boiler house are in poor condition; badly deteriorated and unstable. Currently, portions of the exterior perimeter of the building are surrounded with safety netting but the immediate stability of the structure must be addressed in the near future.
- The masonry basement walls facing the football stadium exhibit mortar joint deterioration in multiple areas. Additionally, at the top of the wall where steel beam penetrations occur from the abandoned walkway to the interior columns, the brick has fallen away, exposing the interior to exterior elements, moisture infiltration and vermin. Surrounding brick is loose and, potentially, can fall to the ground below. Infill of the openings is recommended.
- The masonry surrounding the steel channel framing of the stadium bathroom landings requires rebuilding and repointing to prevent water infiltration and further deterioration.
- At the brick corner pilaster where the demolished stadium seating, abandoned walkway and street level driveway meet, the foundation support and masonry base have deteriorated badly; with spalling, cracking and failure of the foundation and masonry veneer failure and fallout at the corner. The area should be rebuilt and repaired immediately.

MECHANICAL ASSESSMENT:

The heating system consists of low pressure steam boilers, air handlers, unit ventilators, radiators, and fin tube. Most of the heating systems appear to be original to the building with the exception of a few items upgraded with equipment date codes 8-1973.

As noted in a letter provided to our office by the school district, “the 3,000 gallon bulk oil storage tank was replaced in 1995 along with safety devices and is in compliance with EPA and DEP

regulations". The oil tank should be double wall constructed and provided with a leak detection system. During the walk through a leak detection system could not be identified, and the type of tank could not be confirmed.

There are three (3) supply air fans with steam coils located on the first floor of boiler building. These supply air fans appear to be original to the building. Two are not in operating condition. The fan associated with the auditorium has not been used in years.

There are six (6) supply air fans with steam coils located in the mezzanine area of the main building. These supply air fans appear to be original to the building, and are not in operating condition.

Central cooling was not provided for this building.

Heating System:

- There are four (4) low pressure steam boilers installed at this site:
  - Two (2) are as manufactured by Superior and are rated at 10,000 lbs./hr. One (1) of the boilers is in non-operational condition. These boilers were fabricated in 1964, are 50 +/- years old, have numerous repair and alteration tags attached, and have exceeded their useful service life.
  - The two (2) other low pressure steam boilers are as manufactured by International Boiler Works, (IBW); Model: FLP-17-313. The burner was manufactured by Iron Fireman with a 5,000 MBH minimum firing rate and a 15,000 MBH maximum with natural gas; and a minimum of 33 GPH and a maximum of 100 GHP on oil. These boilers are in operating condition. The boilers were manufactured in 1988, are approximately 26 years old, and are near the end of their service life. These boilers also have numerous repair and alteration tags attached.
- The boilers provide steam for various types of heating equipment, air handlers, unit ventilators, heating coils, cabinet heater, cast iron radiators, fin tube, etc. Most these items are original to the building and exceed their useful service life.
- There is condensate receivers with integral pumps located through the lower level that should be repaired or replaced as needed.
- Steam traps throughout the building should be checked to verify that they are in proper working order and should be repaired or replaced as necessary.
- Combustion air for the boilers appears to be adequate although the installation does not comply with the International Fuel Gas Code (IFGC) requirement of one opening within 12 inches of the ceiling and one opening within 12 inches of the floor.
- The condensate receiver integral to the boiler feed unit was replaced around 2007-2008, and reconnected to the existing condensate pumps and control panel. The age of the control panel and pumps could not be determined.
- Emergency boiler off-switches have not been installed at the exits from the boiler room.

Ground Floor:

Classrooms:

- These classrooms are heated with a combination of steam convectors, radiators and unit ventilators. Both floor and ceiling mounted unit ventilators have been installed in these classrooms. Outdoor air for the classroom ventilation is provided by the unit ventilators and/ or operable windows. Exact age of this equipment could not be determined; however, renovations to this building were made in 1955. This equipment is approximately 60 years old, has exceeded its useful life, and should be scheduled for replacement.

Wrestling Rooms/ Coaches Office:

- A steam unit heater was provided for heating these areas. This type of equipment provides heating only and does not have any provisions to provide outdoor air as required to ventilate the space. Ventilation of these areas is required as noted in the mechanical code.
- A wall mounted exhaust fan is installed in one of the wrestling rooms. The fan is a belt drive type. The belt guard was not installed at the time of the walk through. The guard should be replaced as a serious injury could result if anyone comes in contact with the belt while the fan is operating.

Wrestling Locker Room, Weight Room, and Boys Locker and Shower Area:

- Heating and ventilation for these areas is provided by a ceiling mounted air handler and integral steam coil. This equipment is located in a mechanical room located next to these areas. Ventilation for these rooms appears to be inadequate for the activity associated with these areas. The exhaust installed for these areas also does not appear be adequate and should be field verified with a balancing report to verify the actual air flow.
- The weight room has its own cooling-only split air handling system. This system has no means to introduce outdoor air to ventilate this room. Because this is a standalone system and the controls are not interlocked with the main building systems, there may be times when simultaneous heating and cooling can occur in this room.

Visitors Lockers, Girls Pool, Girls Locker and Shower Area:

- Heating and ventilation for these areas is provided by a ceiling mounted air handler and steam coil located in a mechanical room near the pool area. Ventilation appears not to be adequate for the activity associated with these areas. The exhaust system also appears to be inadequate and the actual performance of the exhaust system should be verified.
- The girl's pool has been drained and is no longer in use.
- Items are currently being stored on the pool deck reducing the clearance of the service walkway into the mechanical room. These items should be relocated or a railing should be installed to reduce the possibility of falling into the pool.

Industrial Arts Area: Woodworking Shop

- An air handling unit provides heating and ventilation for the shop areas. Air is ducted to registers mounted in the exposed ductwork in the ceiling area. Cooling is not provided in this area.
- A central dust collection system has been installed and connected to a majority of the wood working equipment. The dust collector is located outdoors and adjacent to the wood shop.
- A paint hood and exhaust fan has been installed in the wood shop. The fan is operational but the performance could not be determined.
- At the time of the site visit a section of the wood shop was being converted to a classroom for CAD drafting.

Band Room

- The band room is heated and cooled by a ceiling mounted split air handling system. The air handler unit consists of a DX cooling coil, steam coil, and a remote condensing unit. This unit also has an outdoor air intake louver to provide ventilation for the Band Room. The air handler is located in a storage room adjacent to the band room. Ventilation appears adequate for this area and should be field verified with a balancing report.
- The refrigeration piping in the storage room is coated with ice. The refrigerant pipe insulation for this system should be replaced in its entirety. The insulation located outdoors should also be protected from the elements and enclosed with aluminum jacketing.

Batting Cage, Band/Art, and Baseball Room Areas:

- Heating is provided with ceiling mounted steam unit heaters. There is currently no means provided for mechanical ventilation of these areas. Operable windows may be used for ventilation of these areas during seasonal weather.

Field Area – Toilets, Locker and Shower Area:

- Heating for these areas is provided with ceiling mounted radiators. There is no mechanical ventilation or exhaust installed for the showers or toilet rooms. This is a requirement of the mechanical code.

Corridors:

- There is no mechanical ventilation in the corridor areas. Ventilation for corridors is a requirement of the mechanical code.

<u>Upper Floors:</u>

Classrooms:

- The majority of classrooms are heated with enclosed steam radiators. Some classrooms have exposed radiators and steam piping. These radiators and piping should be covered to avoid the possibility of accidental burns to the occupants.

- The original design incorporated supply air fans installed in the mezzanine area. These systems may not be operational. During conversations with the faculty and other personnel it was noted the absence of air flow from the registers during the school year.
- Ventilation is provided via operable windows for classrooms located along the exterior walls.
- Window air conditioners are located in the third floor computer labs. When the window air conditioners are operational the windows and classroom doors are closed. This severely limits the amount of outdoor air required for ventilation of the classroom.

Choral, English, and the two (2) Family Consumer Science Classrooms:

- Classroom unit ventilators were installed in the mid 70's as a HVAC upgrade to these areas. The units were not operational at the time of the site visit. In conversations with personnel it was noted that two (2) of the units are not operational. These units are approximately 41 years old, are past there useful service life, and should be scheduled for replacement.

Library:

- Classroom unit ventilators are as manufactured by Herman Nelson and were installed in the mid 70's as a HVAC upgrade to this area. The units were not operational at the time of the site visit. In conversations with personnel it was noted that these units are non-operational. These units are approximately 41 years old, are past there useful service life, and should be scheduled for replacement.

Auditorium:

- Heating and ventilation of the Auditorium is provided by a supply air fan (with integral steam coil) located on the first floor of the boiler. This system appears to have been installed as original equipment when the building was constructed. This equipment, although operational, has not been energized for years. The supply outlets associated with this system are located on the floor, under the seats. When last energized, the ventilation system blew dust, dirt etc. into the Auditorium. The system has not been used in at least ten years since this incident. This system is well past its useful life and should be scheduled for replacement in its entirety.
- Additionally, ventilation for high occupancy areas should utilize CO2 detection and energy recovery should be provided where possible to reduce energy cost.

Gymnasium:

- High wall steam convectors provide heating and sidewall exhaust fans provide ventilation for this area. Excess air is relieved through gravity hoods. Ventilation for this area appears insufficient for the activities associated with the space.

Administration Areas:

- PTAC units provide heating and cooling and to a limited degree ventilation for these areas.
- Ventilation for these areas can also be provided via operable windows when the PTAC units are not operating.

Server Room:

- In conversations with the IT department, it was noted that there is an issue with heat build-up in the server room. The room temperature routinely exceeds the operating range of the server and the equipment will shut down. This shut down disrupts the phone service and computer lab equipment.
- A ductless split type air conditioner should be considered for these areas to help alleviate this problem.

Nurse's Area:

- Wall mounted steam convectors provides heating for this area.
- Operable windows provide ventilation for the nurse's office areas.
- A window air conditioning unit was installed in the nurse's office area only.
- The other rooms located in the nurse's suite area do not have air conditioning or a means for ventilation.
- There is no exhaust for the toilet room. Exhaust for toilet rooms is a requirement of the mechanical code.

Kitchen:

- A transfer air grille located in the common wall with the cafeteria area providing make-up air for the kitchen hood.
- Two (2) back to back canopy kitchen hoods are installed in the kitchen area. A fire suppression system was provided for one of the hoods. The exhaust air flow should be verified for this system.
- The ventilation and make-up air systems were not operating at the time of the survey. Refer to Cafeteria notes below.

Kitchen Refrigeration Equipment:

- Compressors for the Kitchen refrigerator and freezer are located in the Kitchen area. The compressors are water cooled. Domestic water is used for the removal of heat from the compressors. The water is then dumped as waste into the sanitary system. There is no exhaust or ventilation or refrigerant monitoring of the compressor area in the event of a refrigerant leak.

Cafeteria:

- High wall mounted steam convectors provide heating for the Cafeteria area.
- An air handler located in a second floor mechanical room was installed to provide ventilation for this area. The air handler appears to be original to the building and is not in

working condition. This system also appears to have been installed to provide make-up air for the kitchen hood.

Athletics Director's Office

- Steam radiation provides heat for this area.
- Ventilation is provided by operable windows.
- A window air conditioning unit has been installed, providing cooling for this office.
- Exhaust is inadequate for the toilet room located in this office area.

Faculty Toilet Rooms:

- The exhaust for these areas appears to be insufficient. During the multiple site visits no air flow could be verified.
- Some of the Faculty Toilet Rooms have individual ceiling cabinet fans ducted to the exterior of the building; this is typical for smaller toilets.
- Some of the Faculty, Nurse's, and Administration toilet rooms do not have any exhaust. Exhaust for these areas is a requirement of the International Mechanical Code (IMC).

Boys and Girls Toilet Areas:

- An exhaust system has been installed for these areas and appears to be inadequate. During the multiple site visits no air flow could be verified at the grilles.
- Supply air is not introduced directly into the toilet rooms or corridors. The air being exhausted from the toilet rooms is also being made-up from the corridors. This is a conflict with the current mechanical code because there is no make-up air being supplied to the corridor.

Janitor Closets:

- Exhaust is not provided for the Janitor Closets. Exhaust for these areas is required by the mechanical code.

Corridors:

- There is no mechanical ventilation in the corridor areas. Ventilation of the corridors is a requirement of the mechanical code.
- Steam baseboard and radiators provides heating for the stairwells and corridors.
- There are exposed radiators and piping located in the corridors. Covers should be installed on the radiators and insulation on the piping to alleviate the possibility of accidental burns.

Emergency Generator - Boiler Room:

- There is an emergency generator located on the ground floor of the Boiler Building. There are also two (2) boilers for providing domestic hot water installed in the same area. The outdoor air required for the generator's combustion and make-up air for the radiator exhaust appears to be inadequate. Before considering the additional combustion air required for the boiler operation, it should be field verified what equipment is interlocked with the louver, and if the boilers are de-energized when the emergency generator is operating. Because the generator is installed relatively close to the (gravity draft) boilers

and with the amount of exhaust required by the generator when operating, this condition may hamper the boiler operation. Also, if the room becomes negative when the generator is operating, the possibility exists of pulling the fumes down the boiler stack and into the room. Currently there is only one (1) outdoor air intake louver located near the ceiling in this area. Additionally, for the boilers to be compliant with the International Fuel Gas Code (IFGC), a second source of outdoor air should be introduced within 12" of the floor.

Emergency Generator - Field Locker Room Area:

- An emergency generator is located near the Field Locker Room. Outdoor air for combustion and make-up air for the radiator exhaust appears to be adequate.

Maintenance/ Electrical Room - First Floor:

- An emergency generator is located in the maintenance area. An outdoor air intake for the generator's combustion and make-up air for the radiator exhaust has not been installed. All the air required for the operation of the generator is taken from the surrounding area. The maintenance/ electrical door to the corridor in normally left open to provide adequate air flow for the generator operation.

Automatic Controls:

- A pneumatic type control system was installed for the High School. The system consists of an air compressor mounted on a steel receiver and a pressure regulator. At the time of the survey, a refrigerant air dryer was not installed for the pneumatic control system. This will hinder the ability of the controls to maintain temperature. Although some repairs were made by a service company, there still remains numerous leaks and damaged tubing in the basement. At a minimum the system should be checked for leaks and repaired, room sensors, dampers and valve actuators should be verified as operational and recalibrated or replaced. Controls should be replaced if needed. It is energy inefficient to operate a building with temperature controls not functioning properly.
- A pneumatic control system has a service life of 20 years. This system has exceeded its useful life and should be scheduled for replacement.
- A DDC Facility Management System was installed at this location in 2002 to interface with the existing pneumatic system. DDC systems have a service life of 15-16 years. This system is 12 years old and is approaching the end of its useful service life. This system includes:
  - Carbon dioxide (CO2) control for the Auditorium/ Cafeteria Area
  - Occupancy and Un-occupancy scheduling for the HVAC systems
  - Facility Management System that monitors, controls, and issues alarm reports and alarm reporting via e-mail or paging over an intranet or internet.

PLUMBING ASSESSMENT:

Domestic Water Service:

- The domestic water service comes off Carey Ave. into a meter pit located in the driveway at the boiler room. The domestic water main from the meter pit throughout the building was replaced in 2012. All branch lines are original and were not replaced. Existing branch lines consist of brass, copper and steel piping.

Domestic Water Heater:

- There are two (2) Teledyne-Laars 1,200,000 btuh gas fired domestic hot water boilers. The domestic hot water is piped to two (2) 200 gal. Lochinver domestic hot water storage tanks. The domestic hot water boilers were installed in 1988.
- Kitchen storage has one (1) 120 gal. electric water heater serving the kitchen area.
- The Basement Storage Room next to the main stairs has one (1) 120 gal. electric water heater serving the toilet rooms on the 1st floor.
- The Basement Utility Room next to Wrestling Room has a 10 gal. electric water heater for janitorial services.

Natural Gas Service:

- Gas service enters the boiler house building and serves the domestic hot water boilers, heating boilers, three (3) emergency generators, kitchen equipment, pump house for storm water, and laboratory classrooms. Some of the laboratory classroom's gas has been shut off due to leaks. The gas meter is located in the UGI building near the boiler room.

Sanitary and Storm Sewers:

- The sanitary sewer exits the building and flows by gravity to the municipal system on Old River Road.
- The storm sewer has scupper drains which spill on grade and flow to the yard drains. The storm sewer is collected and flows along with stadium drainage system to the pump house on the Old River Road side of the stadium and is pumped to the municipal system on Old River Road.

Kitchen:

- The kitchen is a full service kitchen with a grease trap in the basement. The kitchen hood has a suppression system. The basement storage room has a water cooled refrigeration system for the kitchen coolers. The water for the refrigerator system runs continuously 24 hours a day year round.

Plumbing Fixtures:

- The plumbing fixtures for the most part appear to be original fixtures and trim. The fixtures should be replaced to meet allowable flow rates and consumption for plumbing fixtures and fixture fittings set by the International Plumbing Code. The fixtures should comply with the Americans with Disabilities Act. Approximately 60% of the showers in the Boy's & Girl's Locker Rooms are working properly.

Fire Protection:

- Consists of two (2) standpipes on the stage. The system is fed from a separate line from Carey Avenue and it is not metered.

ELECTRICAL ASSESSMENT:

Incoming Electrical Service:

- The existing electrical service is 120/208V, 3PH, 4W and rated for 2000 amps. Service is fed from a PPL pad mounted transformer. The most recent maximum demand occurred April 2014 to May 2014 and was 259 KW which is approximately 719 amps. Based on PPL's maximum demand readings the building is only using 36% of its design capacity which will allow room for future growth.

Existing Power Distribution:

- The existing 120/208V, 3PH, 4W, 2000 Amp rated Main Distribution Panel (MDP) is over 40 years old. The MDP is outdated and is at the end of its useful life and should be replaced. The ability to find replacement parts for the panel is doubtful. The use of any fabricated parts would be expensive.
- The existing subpanels are 120/208V, 3PH, 4W and are outdated and should be replaced. Most panels are full and the ability to add additional circuits is unlikely.

Emergency Lighting and Exit Signs:

- The existing emergency lighting system is provided by three natural gas backup emergency generators. It cannot be determined if the existing emergency lighting is adequate without testing the generators under load conditions.
- Most exit signs are paper and not illuminated or internally lit. Also, building does not appear to have enough exit signage marking the means of egress.

Emergency Generators:

- There are three natural gas fired emergency generators, 40 KW, 55 KW and 140 KW. They serve emergency lighting, boilers and pumps. They are all around 40 years old and should be considered for replacement.

Fire Alarm System:

- The fire alarm system is new and was replaced in late 2013 or early 2014. The new fire alarm system is not ADA compliant. The mounting height of the fire alarm pull stations should be lower and there are no visual strobes for the hearing impaired.

Lighting General Areas:

- Lighting in corridors, offices, mechanical and storage areas were upgraded approximately eight years ago with electronic ballasts and energy saving T8 – 32 watt fluorescent lamps. The lighting in these areas appear to be adequate. Yellowing lenses should be replaced to improve fixture efficiency.

Typical Classroom:

- Lighting in classrooms was upgraded approximately eight years ago with electronic ballasts and energy saving T8 – 32 watt fluorescent lamps. Lighting levels in classrooms appear to be adequate. Any yellowing lenses should be replaced to improve fixture efficiency.
- The classroom lighting fixtures are currently controlled by a wall switch and ceiling mounted occupancy sensor for added energy savings.
- Currently most classrooms don't appear to have an adequate quantity of general purpose receptacles. Additional receptacles should be added if local power panels can accommodate the added circuits.

Master Clock System:

- The existing master clock system does not appear to be working properly and should be replaced.

Telephone and Intercom Systems:

- The telephone system has been recently replaced with a voice over internet protocol (VoIP) system.

Auditorium Stage Lighting and Sound System:

- The existing auditorium lighting panel is approximately 40 years old and should be replaced with a new digital system. The existing incandescent border lights should be changed to LED lights for added energy savings.
- The sound system is old and should be replaced.

Data System:

- The building's main distribution frame (MDF) is not properly cooled. During warmer months the buildup of heat causes the system to shut down. Also, during shut down the phone system is inoperable because it is tied into the MDF.
- Classroom data jacks appear to meet the district's needs.

SITE ASSESSMENT:

Meyers Junior/Senior High School is located along Carey Avenue in the heart of residential south Wilkes-Barre. The approximate 7 ¾ acre property is situated at the corner of Carey Avenue and Hanover Street and occupies the entire block width along Hanover Street to Old River Road. The east half of the property is occupied by the school building with the remainder being Meyers Stadium. Meyers Stadium is the home field for all of the city three high schools as well as Holy Redeemer, a private parochial secondary school. Facilities at the stadium include a synthetic turf football field and a modern aluminum grandstand surrounded by a 6 lane synthetic running track. Track field events are held off-site. There is no formal on-site parking lot. Staff park around the building in odd outdoor spaces in courts and along the edge of the running track.

Concrete Walks

- Sidewalks along the city streets in the immediate area of Meyers High School are generally in good condition. Concrete walks on school property adjacent to the school building are in good condition needing only routine maintenance.
- Painted finishes on railings along Carey Avenue are peeling. Railing sections are damaged near the handicapped ramp.

Walls and Stairs

- Retaining wall finishes along the wall base are cracked and spalling.
- Site walls and fencing along property lines are damaged.
- Patch and restore retaining wall surface finishes. Reconstruct deteriorating concrete walls. Patch and paint wall surfaces inside of stadium.
- Paint railing along Carey Avenue
- Reconstruct concrete wall along the north east property lines. Install new chain link fencing on top of the wall.

Asphalt Pavement/Parking

- Asphalt pavements on-site around the high school building are failing and require reconstruction.
- Remove and replace asphalt drives and parking areas throughout site.
- Pave gravel parking area along east side of track.

Storm Drainage

- Fill and repair washed out areas in the lawn.
- Clean out area drains, storm inlets and storm drainage pipes.
- Clean out on-site storm drains.

Handicapped Accessibility

- Accessible curb ramps do not meet current standards.
- There are no accessible parking spaces.
- Reconstruct handicapped curb ramps to meet current standards.

Site Furnishings and Outdoor Landscaping

- In general non paved surfaces should be lawn, vegetated or stabilized with stone to prevent erosion.
- Stabilize embankments with stone mulch.

Stadium

- The track surface is showing wear, areas have detached from the asphalt base. The track is reportedly more than 9 years and the surface is showing signs of wear.
- Synthetic turf football field appears to be in good condition however maintenance staff reported that the field is 9 years old. The field should be tested to verify the shock adsorbing ability is within acceptable levels.

- Gravel area on the east side of the track is being used for parking. The area is weedy and not well defined with remnants of foundation walls from demolished bleachers exposed.
- Lawn areas surrounding the track cleaned and restored.
- Areas of exposed retaining walls surfaces are spalling.
- Topsoil, fertilize and seed lawns throughout site.
- Refurbish planting beds throughout site. Prune trees and shrubs.
- Repair delaminated track surfaces. Track and turf field are reportedly over 9 years old. Budget for replacement within next few years.

GAR MEMORIAL JUNIOR/SENIOR HIGH SCHOOL
WILKES-BARRE, PA

GENERAL DESCRIPTION

Original Construction -	1925
Renovations -	1979 (New Gym Expansion)
	2005 (Fitness Center)
	2010 (Artificial Surface at Practice Field)
IBC Construction -	Construction Type IIB
Site Acreage -	4.381acres
Gross Building Area -	203,150 +/- SF
Current Enrollment -	828
Current Grades -	7 - 12
Number of Classrooms -	50 regular
	14 special education

OVERVIEW

The GAR Memorial Junior/Senior High School has two major building elements: the 1925 original building which has four floor levels plus a basement, and also the 1979 new wing which principally includes a new gymnasium and cafeteria. In 2005 a small addition for a fitness facility was built next to the new wing; in 2010 the school's adjoining practice field received artificial turf.

GAR -- named for the Grand Army of the Republic -- is situated in a distinct grid of streets developed in the later 19th century that are named after American Civil War generals, in a neighborhood known as The Heights. The high school sits at 50 feet or so above the Susquehanna River flood plain and has never sustained any structural disturbance or water damage as the other two city high schools have.

Defining Characteristic: Geographically Separate Population Center

- Because of its distinct topography on a hillock on the edge of the Wyoming Valley, the entire Heights area -- along with its nearby city 'sections' of Mayflower, Wilkes-Barre Township, Georgetown, and Rolling Mill Hill -- has a distinct geographical identity with respect to the rest of the city. It is more or less centered along the length of the long oblong of Wilkes-Barre's footprint along the Susquehanna River. However this high land is also to the eastern edge of the city, and it is separated from the rest of Wilkes-Barre by a north-south four-lane distributor highway that runs atop the former route of numerous parallel rail lines.
- Consequently, the GAR geographical zone has long had a unique identity relative to the south and north ends of the city, and as such has supported a secondary center of its own for the last 90 years. Currently over 90% of GAR students walk to the school.

Historical Status

- GAR Memorial High School is architecturally within the tradition of the early 20th century's Neo-Classical Revival Style in America. Its substantial materials and rational and functional floor plan arrangements give the building a character that qualifies it as an archetypal example of substantial American public school construction at a grand civic scale in an urban environment. The school is not on the National Register of Historic Places.
- In particular, the entrance foyer, grand staircase, and two-story auditorium together form a sequence of spaces exemplar of public school architecture in its time. To a significant degree the character of these core elements in the interior public procession are remarkably intact. An interior vestibule constructed at the main entry (to create an airlock) is an intrusive element in the structure. However, little in the way of non-reversible modifications has been made to the main entry/auditorium space sequence.
- The 1979 expansion attaches itself to the original building with a connection that obscures the view of one corner of the primary elevation. This reduces the architectural unity of the main façade which overlooks the city. However, it is fair to acknowledge that GAR's urban site is extremely constrained in both plan and elevation. The site required retaining walls to develop access for emergency vehicles to the new gym, and an interior access road on the site was developed to improve emergency-vehicle access to the main entrance and the new gym entrance. In brief, a host of site, code, and functionality issues that were unimaginable in 1925 had to be addressed by the 1979 expansion, with a result that provided great functional improvement at the time at the expense of the architectural integrity of the building's original imposing and refined symmetrical face to the city.

Statement of Functional Obsolescence:

- GAR is 90 years of age in its original high school and 35 years of age in its major gymnasium and cafeteria expansion. The Wilkes-Barre School District has been maintaining the building's life safety systems, its code-compliance level, and its general functionality with ongoing attention and improvements to the building systems.
- At this time however, many of the amenities in the building are into some level of functional obsolescence. For example, while the original handrails are monumental in character at the grand staircase, they are not even in the spirit of a modern railing system; the handrail grip is oversized by contemporary code requirements, and the height of the railing is also out of range. Guard rails do not exist and are not readily implemented on this stair. While not unsafe, and while monitored by the Wilkes-Barre City Code Enforcement Office, the functionality of some aspects of GAR's physical plant is at some distance away from contemporary standards for circulation routes, egress paths, and ADA requirements.
- Some of the corridors are narrow in the building and the entire internal arrangement of hallways is neither large enough by today's standards for a high school. Generally, floor-to-ceiling heights are low; this limitation in height and the substantial nature of many interior walls makes for classrooms that are difficult to reconfigure to a new purpose.
- In fact, it is the very nature of GAR's substantial construction that works against it and makes the building resistant to change. Additionally, the two existing courtyards further

constrain reconfiguration. While these outdoor spaces are beneficial in that they act as large light-wells for interior classrooms, they also constrain the floor plan. Ringed inside and out by substantial masonry walls in good condition, the rational plan of GAR generally works well to this day as a school plan, but nothing inside the ring around the courtyards can easily change. Therefore, as all types of rooms have grown over the last century in space requirements, this building can only adapt to new curriculum requirements by growing new additions, as was done in 1979.

- The outdoor space is large enough for a practice football field and a track, and this space represents a valuable amenity to GAR. The space is large enough for another building expansion and yet the resolution from a planning perspective is not immediately apparent in terms of its impact on the school's already compromised major public façade.
- In conclusion, the functional performance of GAR is acceptable by virtue of careful and thoughtful space utilization; however, the building is not able to provide the same level of amenity as a contemporary high school. At this point in time, the curriculum offerings at GAR conform themselves to the building, as the building cannot conform itself to new purpose.

Code Compliance:

- As with all of the 13 buildings in the Wilkes-Barre Area School District other than the relatively recently built Solomon Junior High School / Solomon Elementary School, code compliance is to an approximation of the current code. However in general terms the District's assets have been upgraded to minimum life-safety performance. The City of Wilkes-Barre has adopted the IEBC (International Existing Building Code), and forbearance on elements of code compliance can be granted under the jurisdictional mandate of the city code enforcement office for existing conditions.
- No life-safety issue deemed of concern is left unaddressed by the Wilkes-Barre School District staff or the city's inspectors who perform regular inspections. However, the IEBC will allow areas that have not been improved to remain 'as is' until renovations of a certain scale are performed, at which time comprehensive improvements may be required either by strict code analysis per the tables, or by the code enforcement official.
- At GAR, areas of code non-compliance include corridor widths based on occupancy loads, stair tower widths for units of egress width, railing conditions, and in some cases smoke barriers. The number of exits and the configuration of the egress routes are in good order in their length of travel and absence of dead-end corridors. With the exception of one basement classroom that has immediate access to a stair tower, the basement is not occupied by students and lacks exits required for that type of occupancy.

ARCHITECTURAL ASSESSMENT:

<u>Exterior Envelope:</u>

Roof System:

- The roof at GAR has been inspected by the WBASD independent roofing consultant, Mark J. Sobeck Roof Consulting. Roughly half the roof at GAR is conditionally rated between a 'B' and 'C' with the oldest installation date being around 1994, but most around 1999, and some few areas in 2004; however, the other half is rated a 'C' and 'F' and needs replacement at this time.
- This represents a fair-to-good rating for the roofing system. A program of roof replacements is described in Sobeck Consulting's report.

Windows:

- Windows at GAR generally have poor air infiltration characteristics, poor operating functionality, and sub-standard insulating values compared to modern windows. Windows at GAR in the main original building are typically large monumentally sized single-hung aluminum replacement windows with transoms and insulating glass, installed around 1979 when the gym expansion was built.
- At this time all windows are at least 35 years old. Where they do have double-glazing, they under-perform in energy conservation as they do not have a low-e coating, standard in modern windows. The caulking is failing throughout, and the operation of the windows is improper. The windows at GAR are recommended to be placed on a maintenance program for replacement, either as soon as possible or in a phased program.

Exterior Masonry:

- GAR's exterior masonry is generally in good condition, with the exception of some brick areas in the interior courtyards up high on the wall near the roof line. Please see the structural section of this assessment.

Interior Finishes:

Walls and Plaster:

- GAR has no signs of differential settlement on its interior. Where small areas of plaster degradation have occurred in the original building in ceilings and on exterior walls, it is in areas of localized water and/or moisture infiltration, mostly from roof conditions.

Ceilings:

- Some areas such as the library and certain classrooms and offices have received a suspended acoustical ceiling installation for acoustical purposes or to achieve a better distribution of lighting. Typically, where these have been installed, the ceilings are of an age where tiles are deflected and in need of replacement. In a building with limited areas with air conditioning, these ceiling systems have been prone to absorbing humidity. Grids are also showing signs of age.

Flooring:

- GAR has terrazzo flooring throughout its public corridors, and vinyl composition tile (VCT) typically in some classrooms and laboratory spaces. The library, some classrooms and administrative offices along with the auditorium are in large measure carpeted. Restrooms are tiled, some of it original to the building.
- Generally, in any major renovation, all flooring other than the terrazzo would be replaced; the terrazzo will need to be repaired, cracks opened and filled, and sealed.

Doors and Hardware:

- All doors are typically thick heavy-duty wood with narrow-lite windows. Where new doors and locksets have been installed, they have been installed in conjunction with the 1979 expansion project.
- The classroom door hardware is sometimes of the knob type into many classrooms. Lever handles are not installed on all doors and to this extent the hardware does not comply with ADA (Americans with Disabilities Act).
- At this time, a door-by-door cataloguing throughout the building is required to fully document the code compliance and serviceability level of all doors and door hardware. However, the general condition is one of a multitude of configurations that could present a security management challenge.

Paint:

- While painting is an ongoing maintenance item for the building, generally many of the interior walls in the school are in need of paint.

STRUCTURAL ASSESSMENT

General

- GAR Memorial High School campus consists primarily of two building structures; scholastic building and sports building. Scholastic building houses classrooms, offices, cafeteria, library, auditorium and labs. The sports building contains a gymnasium, classrooms, and locker rooms. Exterior finishes are combinations of brick veneer, stone and stucco.
- The scholastic building is a four-story structure with a basement, crawlspaces and a sub-basement boiler plant. One-way reinforced concrete roof and floor slabs span across structural steel beams and girders which, in turn, bear on structural steel columns. Basement and foundation walls are reinforced, cast in place concrete continuous wall footings and spread column footings. Basement and sub-basement floors are reinforced concrete slabs-on-grade while crawlspace areas are unexcavated subgrade soil. Exterior finishes are a combination of masonry brick veneer and stone.
- The sports building is a two-story structure with a partially exposed basement connected to the scholastic building second floor via and elevated enclosed bridgeway. Metal roof deck spans across structural steel roof trusses and girders which, in turn, bear on structural steel columns. The gymnasium floor consists of concrete filled metal deck spanning across structural steel joists and girders that bear on the basement walls and structural

steel columns. Basement and foundation walls are reinforced, cast in place concrete continuous wall footings and spread column footings. Basement floors are reinforced concrete slabs-on-grade. Sports fields and running tracks are located adjacent to the building and are bounded on two sides by concrete retaining walls and metal security fencing.

Interior

- Leonard Engineering performed a visual evaluation of the interior surfaces of the campus buildings for the purpose of providing a general condition survey of the exposed finishes, surfaces and structures. In general, the campus buildings' interiors finishes are in good condition.
- Interior finishes consist primarily of painted gypsum plaster wall and ceiling materials with suspended acoustic tile ceilings throughout the majority of the classroom, hallway and office spaces. While there is minimal cracking and spalling of the plaster finishes indicative of structure movement and deflection, there are multiple locations where water infiltration has caused damage including cracking, spalling, sagging and bubbling of the plaster finish. While not indicative of failure to structural elements beneath, long term exposure to moisture can deteriorate framing, beams and columns with rot, corrosion and loss of section to the degree of reducing structural load-carrying capacities. That being said, areas where such water damage was noted to the ceiling and wall finishes did not present additional visual clues indicating structural failure of the hidden structural elements. However, continued monitoring of these areas for further water infiltration is recommended.
- The main central stair has a vaulted plaster ceiling and marble wall tile as well as marble stairs and railings. The general condition of the central stair finishes is good.
- Visual evaluation of the building structural steel and concrete elements was possible in limited locations; basement, gymnasium, crawlspaces and upper industrial arts/graphics labs. In general, the structure was in good condition; exhibiting minimal cracking, spalling, deflection or corrosion. No visual indicators were seen to infer that the original load-carrying capacities of the structure have been reduced. However, it was noted in the crawlspace located at the rear of the boiler plant that running groundwater is visible flowing across the crawlspace floor toward the boiler plant room. A sump pit is located in the boiler plant that collects this water and discharges to the exterior but within the crawlspace area, the bases of the multiple structural steel columns are in contact with this groundwater and are exhibiting corrosion of the flanges, webs and baseplates. The corrosion is minor at this time but will likely continue, increasing the potential for reduction in load-carrying capacity of the columns and the floor structure above. We recommend eliminating the source of the groundwater to prevent further deterioration of the columns along with cleaning, priming and coating the affected corroded steel in the near future. Further, evaluation and monitoring of the crawlspace structure elements currently inaccessible due to debris or storage is also recommended.

Exterior

- The exterior finishes are in good condition; exhibiting minimal deterioration of veneer mortar joints, minimal cracking and displacement due to building settlement or movement and no visible failures of structural elements.
- In several locations around the campus it was noted that concrete is spalling off of wall locations, in pieces as large as 12-inches square. This is particularly prevalent at multiple

locations along the retaining wall that bounds the football practice field as well as the elevated landing outside the maintenance building at the rear of the property. The spalling is being caused by the embedment of the fencing posts into the concrete wall top surface. Water infiltration into the embedment has experienced freeze/thaw cycles as well as corroded the fence posts. This expansion has broken off the concrete from the top of the wall, having it fall to the ground below while, in some cases, the concrete remains partially attached but in danger of falling to the ground below at any time, potentially injuring a student or pedestrian. We recommend that the spalled concrete be removed, the fence posts cleaned, primed and sealed, repair the concrete walls and seal the post embedment to prevent future water infiltration.

MECHANICAL ASSESSMENT

Heating System:

- The heating system including four (4) boilers as manufactured by Kewanee, Catalog Nbr: 7L286-KG05. The boilers are rated at 7,746 MBH, 231HP and a maximum water working pressure of 30 psi. The boilers are duel fuel fired with a minimum firing rate of 2,100 MBH and a maximum of 9683 MBH on natural gas, and a minimum firing rate of 13.6 GPH and a maximum of 65.0 GPH on oil.
- The boilers were manufactured in 1978. They are 36 years old and approaching the end of their useful life. There are numerous repair tags from 2002 through 1-2014 on all of the boilers. The boilers should be scheduled for replacement.
- The boilers provide hot water for the various types of heating equipment, air handler, unit ventilators, heating coils, cabinet heater, etc. Base mounted pumps located in the lower level Mechanical Room circulate the heating water. The majority of these items were installed during a remodel in 1977-1978.
- There is one (1) outdoor air louver located near the ceiling providing combustion air for the boilers. The IFGC requires two permanent openings to be installed in the boiler room; one located within 12" of the ceiling and one located within 12" of the floor. The current installation does not meet this requirement (IFGC: International Fuel Gas Code)
- As noted in a letter provided to our office by the school district "the 3,000 gallon bulk oil storage tank was replaced in 1995 along with safety devices and is in compliance with EPA and DEP regulations". The oil tank should be double wall constructed and provided with a leak detection system". During walk-through a leak detection system could not be identified and the type of tank could not be confirmed.

Cooling Towers:

- There are two (2) cooling towers as manufactured by Baltimore Air Coil (BAL). One is located on the roof near the Library area and was manufactured in 1992, Model – VXT-120 CR, Serial Number – 9210 0542, 4 fans unit, Electric 208V – 3 PH. The second cooling tower is located on the roof of the Gymnasium and was manufactured in 1993, Model: VTO-065-JCR, Serial number: 9310 1112 and is a 3 fan unit, Electric 208V – 3Ph.
- The cooling towers have been in service a minimum of 21 years and are approaching the end of their useful service life. The average useful life for a cooling tower is 20 years as noted in ASHRAE. This equipment should be scheduled for replacement.

Chillers:

- There are numerous chillers as manufactured by Trane located throughout the building. Some of this equipment appears to have been replaced in 2002. This equipment is approximately 12 years old and 50% of its service life is remaining.

Classrooms:

- The majority of classrooms are heated and ventilated with air handling units located on the ground floor. There is also a reheat coil and thermostat located in each classroom, that when properly operating provides a means for individual room temperature control. The air is returned through a grille located in the classroom door that enables the air to move to the corridor area. A return air grille located in the corridor returns the air to the air handler. The majority of these air handling systems were installed during a HVAC upgrade project in the late 70's. These systems i.e. equipment, ductwork, controls are approximately 38 years old and have exceeded their useful service life. Using the corridor as a return air plenum is not permitted as noted in the current mechanical code. The quantity of air permitted to be returned cannot exceed the amount directly supplied to the corridor. The current installation does not meet this code requirement.

Library:

- The air handler for the Library is located in a service core area above the Library ceiling. This air handling system provides heating, cooling and ventilation for the Library area. This system was noted as being installed during a 1977 HVAC renovation. The amount of ventilation being provided as noted on the design drawing is adequate for this area. Air handlers have a service life of approximately 10-15 years as referenced in ASHRAE Applications handbook. This system is approximately 36 years old and should be scheduled for replacement.

Cafeteria:

- The air handler for the Cafeteria is located in an adjacent service core area. This unit provides heating, cooling and ventilation for the Cafeteria. The conditioned air is ducted and distributed through the room with ceiling diffusers. This unit also provides the make-up air for the kitchen exhaust.

Kitchen:

- A commercial kitchen exhaust system consisting of a kitchen hood, exhaust fan and fire suppression system has been installed. The kitchen hood is ducted to a roof mounted exhaust fan. The fire suppression system was installed with nozzles along the length of the hood.
- The kitchen hood does not extend beyond the cooking equipment located underneath the hood. This installation does not meet the requirements of the (IMC) International Mechanical Code.
- A make-up air unit for the kitchen hood exhaust was not installed. The make-up air for the kitchen exhaust system is being provided from the adjacent areas. The kitchen hood exhaust system is using conditioned air from the Cafeteria air handling system as make-

up for the hood exhaust. This is not an energy efficient use of the Cafeteria system. A make-up air unit should be provided for the kitchen area.

- Compressors for the Kitchen freezer and refrigeration equipment are located in a closet area in the Kitchen. The compressors furnished with the refrigeration equipment are water cooled. Domestic water is used to cool the compressors and then dumped to the sanitary sewer system. The compressors have a useful service life of 20 years and this equipment should be scheduled for replacement. As the cafeteria is located directly below the roof, air cooled condensers in lieu of the current water cooled system; should be considered as a replacement for this type of equipment.

Auditorium:

- Two (2) air handling units and chillers are located in the service area under the Auditorium floor provide air conditioning to this room. The both air handlers are relatively new (May of 2013). The two (2) chillers were installed in a previous upgrade to the HVAC system around July 2002. They are approximately twelve (12) years old and appear to be in good condition. The chillers have a useful service life of approximately 20 years as noted by ASHRAE. Supply air is ducted to the room and is supplied to the room with ceiling mounted registers. The return air is ducted back to the air handler. The ventilation provided for this area appears to be satisfactory. This is a fairly new system, however, a balancing report should be completed to verify the operation and air quantities.

Gymnasium:

- There are two (2) air-handling units providing heating and ventilation for this area. The air handlers are located in a service core area near the kitchen and facility dining area. An overhead duct system and diffusers supply air to the space. The air is returned to the air handler through wall grilles and ductwork. Excess air is relieved through gravity hoods.

Industrial Arts and Power Tech Areas:

- There are two (2) air-handling units located on the ground floor providing heating and ventilation to these areas. The air is supplied to the rooms via exposed ductwork and registers located in the ceiling area. These are heating and ventilating systems only.
- The Wood Shop is furnished with a central dust collection system for a majority of the wood working equipment. The dust collector is located outdoors near the wood shop. The dust collector filters the air and returns the air to the wood shop area.
- A spray paint booth and welding area are located in the shop area. Each station has its own separate exhaust system that is in operating condition. The paint booth is used intermittently and the welding area is no longer utilized.
- An exhaust system for automotive repair is located in the Power Tech shop area. This system was partially removed because of roof issues. The fan for this system is installed and operational but no longer used. Currently this classroom area is used for instruction of basic computer aided manufacturing.
- The air handling systems noted above were installed during the renovations noted on a construction drawing dated June 1977, and are approximately 36 years old. The air handlers have a service life of 20 years. The ductwork, diffusers and grilles have a service life is approximately 27 years. These items should be scheduled for replacement.

Admin Office Area:

- An air handling unit located on the ground floor provides heating, ventilating, and air conditioning for these areas. This air handler serves both the interior offices and offices located along the exterior wall. The air is ducted to and from this area by an overhead duct system with ceiling mounted diffusers and return air grilles. The office areas were also provided with VAV boxes (variable air volume) in an effort to provide individual temperature control for the offices. The air handling system is connected to a chiller located on the ground floor and to a cooling tower located on the roof near the Library.
- Ventilation for this area as noted on the construction drawing appears to be appropriate for the use.
- Some of the chillers appear to have been replaced in 2002. This equipment is approximately 12 years old and has 50% of it service life remaining.
- The equipment as noted below was installed during a building renovation in 1977 and is approximately 36 years old. The service life of this equipment as indicated in the ASHARE Applications handbook is as follows: cooling towers, air handlers and VAV boxes have a service life of 20 years and ductwork, diffusers, and grilles have a service life of 27 years. These systems have been in service approximately 36 years and should be scheduled for replacement.
- The toilet-room exhaust system as noted on the construction documents do not appear to be operating as designed. It appears to be providing less than the noted quantity of exhaust.

Faculty Toilet Rooms:

- Exhaust for these toilet rooms are furnished through a ducted central system. A few toilet rooms have individual ceiling mounted exhaust fans. While the volume of air as noted on the construction drawing appears adequate, these systems do not appear to be operating as designed; and appear to be exhausting less than the quantity noted on the drawings.
- Supply air is not directly provided to these areas.
- Radiators are utilized to heat these rooms.

Boys and Girls Toilet Rooms:

- Exhaust for these toilet room have been furnished through a ducted central system and individual room ceiling mounted exhaust fans. While the volume of air as noted on the construction drawing appears adequate, these systems do not appear to be operating as designed and appear to be exhausting less than the noted quantity of exhaust.
- Supply air is not directly provided to these areas.
- Radiators provide heat to these rooms.

Corridors:

- Radiators are utilized to provide heat for the corridor areas.

- Supply and or ventilation air is not directly provided to these areas.
- There is no ventilation of the corridors as required by the IMC.

Emergency Generator:

- The emergency generator is located in the same room as the main electrical service. The generator is oil fired. A 275 gallon oil storage tank is located in the same room as the generator and electrical service. The oil storage tank was installed without a containment pan. If the oil tank fails it will flood the room with oil. A containment pan should be provided for this installation.
- An outdoor air louver has been installed providing outdoor air for the emergency generator's radiator exhaust and combustion. The outdoor air appears to be adequate for this installation.

Automatic Controls:

- A pneumatic type control system was installed for the High School. The system consists of a few air compressors mounted on a steel receivers and refrigerant air dryers located on the ground floor. A minimum of direct digital controls have also been installed at this school that interface with the existing pneumatic control system. The pneumatic controls have been in service for approximate 36 years. The nominal service life of pneumatic controls is 20 years. This system is antiquated, has exceeded it useful life, and should be scheduled for replacement

- A DDC Facility Management System was installed in 2002 to interface with the existing pneumatic system. DDC systems have a service life of 15-16 years; this system is 12 years old and is approaching the end of its useful service life. This system includes:
  - Carbon dioxide (CO2) control for the Auditorium/ Cafeteria Area
  - Occupancy and Un-occupancy scheduling for the HVAC systems
  - Facility Management System that monitors, controls, and issues alarm reports and alarm reporting via e-mail or paging over an intranet or internet.
- The DDC system was modified in 2013 reflecting the installation of new air handlers serving the Auditorium

Roof Mounted Equipment:

- In a few instances, serviceable mechanical equipment has been located within 10 feet of the roof edge. The mechanical code notes that equipment within 10 feet of the roof edge shall be provided with a guard as specified in the International Building Code.

PLUMBING ASSESSMENT:

Domestic Water Service:

- A 4" domestic water line enters the boiler room from Lehigh Street. It has a reduced pressure back flow preventer. There is a water meter pit in the lawn on Lehigh Street. The piping observed was copper tubing. Most of the piping is insulated although a small amount can be found that is not insulated.

Domestic Water Heaters:

- The domestic hot water is produced by two (2) AJAC boilers 700,000 btuh input each (year 2002). The domestic hot water is piped to a RECO storage tank 6' diameter x 12' long (year 1978).

Natural Gas Service:

- The gas piping enters the building in the boiler room. It serves (3) heating boilers, (2) domestic water boilers, and laboratory equipment. The gas meter is located on Lehigh Street.

Sanitary & Storm Sewers:

- The sanitary sewer piping exits the building toward Lehigh Street. The 'B' section sanitary piping flows to South Grant Street.
- The storm sewer piping has exterior scupper drains that are piped to grade. An interior piping system exits the building at Lehigh Street. The 'B' section flows to South Grant Street.

Kitchen:

- The kitchen is a full service kitchen. The appliances are electric. There is a grease interceptor located in the basement Mechanical Room in the 'B' section.

Plumbing Fixtures:

- The plumbing fixtures for the most part appear to be original fixtures and trim. The fixtures should be replaced to meet allowable flow rates and consumption for plumbing fixture fittings set by the International Plumbing Code. The fixtures should comply with the Americans with Disabilities Act.

Fire Protection:

- There is no fire protection system. A fire protection system should be added.

ELECTRICAL ASSESSMENT:

Incoming Electrical Service:

- The existing electrical service is 120/208V, 3PH, 4W, 4000 amps. Service is fed from a PPL transformer. The most recent maximum demand occurred between January 2014 to February 2014 and was 380 KW which is equal to 1,055 amps. Based on PP&L's maximum demand readings the building is only using 26% of its designed capacity which will allow for future growth.

Existing Power Distribution:

- The Existing 120/208V, 3PH, 4W, 4000 Amp rated Main Distribution Panel (MDP) is over 50 years old. The MDP is outdated and is at the end of its useful life and should be replaced.

The ability to find replacement parts for the panel is doubtful. The use of any fabricated parts would be expensive.
- The existing subpanels are 120/208V, 3PH, 4W and are outdated and should be replaced. Most panels are full and the ability to add additional circuits is unlikely.

Emergency Lighting and Exit Signs:
- The existing emergency lighting system is provided by a 60 KW oil fired emergency generator. It cannot be determined if the existing emergency lighting is adequate without testing the generator under load conditions. The existing exit signs all appear to be in good working condition. A few signs have been vandalized and should be replaced.

Emergency Generator:
- The existing 60 KW oil fired emergency generator is over 30 years old. It serves emergency lighting and kitchen freezers/coolers. Due to its age, the generator should be considered for replacement. The existing generator oil tank should be replaced or retrofitted with a reservoir to contain the full amount of oil in case of tank leak or rupture.

Fire Alarm System:
- The fire alarm system is new and was replaced in late 2013 or early 2014. The new fire alarm system is not ADA compliant. The mounting heights of the pull stations are not at proper heights and there are no visual strobes for the hearing impaired.

Lighting General Areas:
- Lighting in corridors, offices, mechanical and storage areas was upgraded approximately eight years ago with electronic ballasts and energy saving T8 – 32 watt fluorescent lamps. Lighting in these areas appears to be adequate. Any yellowing lenses should be replaced to improve lighting fixture efficiency.

Typical Classroom:
- Lighting in classrooms was updated approximately eight years ago with energy efficient electronic ballasts and T8 – 32 watt fluorescent lamps.
- The classroom lighting fixtures are controlled by a wall switch and ceiling mounted occupancy sensor for added energy savings.
- Most classrooms don't appear to have an adequate quantity of general purpose receptacles. Additional receptacles should be added if local power panels can accommodate the added circuits.

Master Clock System:
- The master clock system does not appear to be working and should be replaced.

Telephone and Intercom Systems:
- The telephone was recently replaced with a voice over internet protocol (VoIP) system.

Auditorium Stage Lighting and Sound System:

- The stage lighting control panel was recently replaced with a new digital system.
- Sound system is old and should be replaced.

Data System:

- The main distribution frame (MDF) is properly cooled without issues. The data system is adequate.
- Classroom data jacks appear to meet the district's needs.

SITE ASSESSMENT:

GAR Junior/Senior High School is located on a 4.38 acre parcel in the Heights section of Wilkes-Barre. The school is located along South Grant Street, bounded on three sides by South Grant Street, Lehigh Street and South Sherman Street. The general topography of the area is moderately sloping to the northwest. The surrounding neighborhoods are low to medium density residential housing placing a majority of students within walking distance of the school. Students from the neighborhoods utilize the sidewalks along city streets while students from Wilkes-Barre Township and outlying areas are bussed. GAR buildings and facilities are terraced into the hill side stepping from the back of the main building along South Sherman Street down to the sports field fronting on South Grant Street. The terraces are created using a series of retaining walls to hold back the hillside.

Concrete Walks, Roadways and Site Improvements:

- Sidewalks along the city streets in the immediate area of GAR are good to fair condition. The worst sections are along South Grant Street adjacent to the retaining wall. In many areas on school property the walks have settled, cracked and are tripping hazards.
- Replace cracked and settled concrete walks.
- Reconstruct handicapped curb ramps to meet current standards.

Walls and Stairs:

- Concrete stairs and curbs are spalling, and cracked.
- Finishes on railings throughout the property along walls and stairs are in poor condition. Railing sections are damaged.
- Tops of retaining walls area cracked and spalling, wall finish faces are cracked and falling off.
- Patch and restore retaining wall surface finishes. Reconstruct deteriorating concrete walls.
- Remove and replace deteriorating concrete stairs.
- Extend hand rails along high curb.

Asphalt Pavement/Parking:

- Asphalt pavements on-site around the high school building are failing and require reconstruction.
- Remove and replace asphalt drives and parking areas throughout site.

Storm Drainage:

- Fill and repair washed out areas in the lawn.
- Clean out area drains, storm inlets and storm drainage pipes.
- Install storm drainage to intercept storm flows and eliminate erosion.

Handicapped Accessibility:

- Accessible entrances do not meet current standards. Accessible curb ramps do not meet current standards.
- Accessible parking spaces do not meet current standards.

Site Furnishings and Landscaping:

- Finishes on benches on the west side of the building are worn.
- All landscape beds need refurbishing.
- Areas within the track surface have depressions holding water. Track grade near west retaining wall is uneven. Fill in depressions in track surface with track filler and structural spray surfacing material.
- Synthetic turf is in good condition.
- Repair and paint fencing throughout site.
- Regrade and reseed lawn areas.
- Refurbish planting beds throughout site. Prune trees and shrubs.

SOLOMON PLAINS ELEMENTARY/JUNIOR HIGH SCHOOL

WILKES-BARRE, PA

GENERAL DESCRIPTION

Original Construction -	1996	
Renovations -	N/A	
IBC Construction -	Construction Type IIB	
Site Acreage -	35.483 acres	
Gross Building Area -	Elementary:	91,168 +/- SF
	Middle School:	96,711 +/- SF
Current Enrollment -	Elementary:	905
	Middle School:	487
Current Grades -	K - 5 Elementary School 7 – 8 Middle School	
Number of Classrooms -		

Elementary - 61
- 54 regular
- 7 special education

Middle School - 29
- 25 regular
- 4 special education

OVERVIEW

The Solomon Plains Memorial K-8 School is a two-story school built in 1996. It has two major building elements: the Elementary wing, and the Middle School wing. Built to accommodate distinct populations at its inception, the separation between the Elementary and Middle School grades is blurred in some areas but still generally distinct.

The building is the Wilkes-Barre School District's newest building at 18 years of age at the time of this writing. Solomon Plains services the north end of the city and feeds Coughlin High School currently.

Historical Status

- Solomon Plains is not a historical building.

Statement of Functional Obsolescence

- Solomon Plains is not considered functionally. The building has a combined cafeteria and auditorium. No loss of functionality in the facility is discernable.

Code Compliance

- Solomon is still in very great measure compliant to the current IBC Code and the current ADA Guidelines for accessibility. No code work is recommended at this time.

ARCHITECTURAL ASSESSMENT:

Exterior Envelope:

Roof System:

- The roof at Solomon has been inspected by the WBASD independent roofing consultant, Mark J. Sobeck Roof Consulting; the roof is conditionally rated between an 'A' and a 'B' for the entire roof area.

Windows:

- Windows at Solomon are in like-new condition.

Exterior Masonry:

- Solomon's brick veneer is in good condition; however, the steel lintels at window openings should be re-painted.

Interior Finishes:

Walls and Plaster:

- No significant signs of deterioration.

Ceilings:

- No significant areas of replacement other than maintenance items.

Flooring:

- Flooring replacement is a maintenance item at this time.

Doors and Hardware:

- All doors and hardware in the building are less than 20 years old and in generally sound condition.

Paint:

- Painting is a maintenance item for this building.

STRUCTURAL ASSESSMENT

General

- Building is a two-story, structural steel-framed, structure.
- Roof framing consists of metal roof deck spanning across open web steel joists supported by structural steel girders and columns.
- Floor framing consists of concrete-filled metal deck spanning across open web steel joists supported by structural steel girders and columns.
- Gymnasium roof framing consists of metal roof deck spanning across open web steel joists supported by steel joist girders and columns
- Ground level floors are concrete slabs on grade.
- Exterior walls are brick veneer backed by non-load bearing framing.

Interior

- Visible wall, ceiling and floor surface conditions are good.
- Visible structural elements show minimal signs of corrosion, damage, cracking, settlement or deterioration.
- Localized cracks in CMU in partition walls are indicative of minor, non-structural movement.
- Corner cracks in the CMU partitions of the classrooms are indicative of minor, non-structural movement.
- Second floor linear crack extending across classroom is not indicative of a structural deficiency. The crack in the floor tile is caused by tile joints being misaligned with, coupled with differential movement in, a floor structure expansion joint beneath. The expansion joint is designed to move to relieve building structure stresses but the expansion joint construction was not constructed into the floor tile, causing it to crack and buckle. The damage has no effect on the structural integrity of the building system.

Exterior

- General condition of exterior surfaces is good.
- Visible brick veneer shows no excessive cracking, spalling or settlement damage.
- Concrete opening lintels show no visible signs of cracking, excessive deflection or displacement.
- Steel opening lintels show early signs of surface corrosion and should be cleaned, primed and painted in the near future.

MECHANICAL ASSESSMENT:

Heating System:

- The heating system consists of two (2) Bryan hot water boilers, Nameplate Data: Model: RV-550-W-FDG, Heating Surface 668 Sq. Ft., MWP Water 160 psi, Pressure Relief Setting: 45 psig, Relief Valve Capacity: 6680 MBH, Serial Numbers: 79586 and 79569, National Board Numbers: 39027 and 39028. The boilers were manufactured in 1996 and are 18 years old. The range of useful service life for this type of boiler is 22 to 24 years. These boilers are approaching the end of their useful service life.
- Boilers are fired with a natural gas burner as manufactured by Gordon-Piatt, Model: R10.2-G-50, with a minimum firing rate of 2750 MBH and a maximum fire rate of 5500 MBH.
- The two existing boilers have been in service for +/- 18 years and are nearing the end of their useful service life. The boilers should be scheduled for replacement along with their associated components (i.e. burners, pumps, expansion tank, etc.).
- The manufacturer of the burner for the boiler Gordon-Piatt is no longer in business. Depending on the availability and cost of parts required for repairs; a new burner should be considered in lieu of repairing the existing burner.
- The boilers provide hot water for classroom unit ventilators, cabinet heaters and unit heaters. The heating water is circulated to the heating coils with base mounted pumps as manufactured by Taco.
- Combustion air is adequate and provided to the boiler room via two (2) gravity intakes installed on the roof directly above the boiler room. The damper actuators are interlocked with the boiler operation.
- Emergency boiler shut-off switches have been installed at the Boiler Room exits.
- The condition of the 3-way valve and valve actuator located in the boiler room should be field verified. This valve along with the ATC system resets and maintains the supply water temperature to the heating equipment. These items should be either repaired or replaced as necessary.

Classrooms, Wood and Power Tech shop areas (located along exterior walls):

- Classroom unit ventilators as manufactured by McQuay International provide cooling, heating, and ventilation for the classrooms located along exterior walls. When the ventilators are not utilized, ventilation air can be introduced into the classrooms by means of operable windows. A gravity relief air hood located on the roof allows the outdoor air to be removed from the classrooms to alleviate any excessive building pressurization. This installation is typical for the elementary and junior high classrooms with exterior walls.
- The unit ventilator is configured with a motor operated outdoor air damper, hydronic heating coil, and self-contained DX cooling, (coil and compressor) located in the unit ventilators housing. As noted on the construction drawings each classroom unit ventilator is furnished with a 3-way modulating control valve. This type of control valve, when properly operating, will aid in maintaining the room temperature.
- Each classroom has an occupant adjustable thermostat interlocked with the classroom ventilator for maintaining space temperature.

- Wood Shop area has power wood working tools. A dust collection system was not provided for the shop.
- Power Tech Area is currently used as a computer driven milling area and a 3-D printing area.
- The condition of the 3-way valve and valve actuator located in the boiler room should be field verified. This valve along with the ATC system resets and maintains the supply water temperature to the heating equipment. These items should be either repaired or replaced as necessary.
- The condition of the 3-way valve and valve actuator located in the classroom unit ventilators should be field verified. This valve along with the t'stat located in the classroom modulates the flow (gpm) of water to the heating equipment in order to maintain the room temperature. These items should be either repaired or replaced as necessary.

Classrooms (interior classrooms):

- Natural gas heating and DX cooling rooftop units as manufactured by York provide cooling, heating, and ventilation for the classrooms located in the interior areas. This installation is typical for the elementary and junior high classrooms.
- Ventilation for this area appears to be adequate based on design data noted on the contract drawings.
- Each classroom has an occupant adjustable thermostat interlocked with the classroom ventilator or a VAV box with a reheat coil to assistance in maintaining space temperature.
- Note: areas converted from original usage as indicated on the drawing; i.e. storage, teachers' lounge to classrooms, may be under ventilated due to the increase in occupancy.

Modular Classroom areas:

- Three (3) modular classrooms have been installed at this site. Heating and cooling for these areas is being provided with a self-contained single zone air handler as manufactured by Bard Manufacturing Company. Each classroom has its own air handler and space mounted thermostat. The air handler is a wall mount package type unit. The equipment was operating at the time of the site visit, however proper ventilation of the areas could not be verified. The equipment was manufactured July of 2003 as noted in a power panel and is approximately 11 years old. This equipment is approaching the end of its service life of 15 years as indicated in ASHRAE Applications handbook. A listing of useful service life of equipment is included at the end of the mechanical study.

Science Lab Classrooms areas: (typical for 3 rooms)

- Refer to classroom descriptions above for the heating, ventilation, and air conditioning provided for these areas.
- Each lab is furnished with a lab hood and a separate exhaust system for each lab hood. As noted on the construction drawings, an explosion proof type exhaust fan has been provided for each hood.

- As noted on the contract drawings, a natural gas fired make-up air unit as manufactured by Sterling was to be provided for the lab hood exhaust. The drawings indicated that the ductwork was to directly connect to the lab hoods. The setup could not be verified at the time of the walk through. The equipment would have been manufactured in 1996 and is approximately 18 years old. The equipment is approaching the end of its useful service life.

Kitchen:

- A rooftop unit as manufactured by York with DX cooling and natural gas heating provides cooling, heating, and ventilation for the Kitchen area. Refer to Cafeteria notes below.
- A commercial kitchen hood with integral exhaust fan and natural gas fired make-up air unit has been installed for the gas fired cooking equipment. The exhaust hood and air quantities appear to be adequate for the cooking equipment located beneath the hood.
- The make-up air unit is as manufactured by Sterling Manufacturing in October of 1996. This type of equipment has a typical useful service life of 20 years. This equipment is approximately 18 years and is approaching the end of its useful service life.
- The kitchen hood exhaust fan is as manufactured by Greenheck in 1996 and is approximately 18 years old. This type of equipment has a typical service life of 25 years and is approaching the end of its useful service life.

Cafeteria/Auditorium:

- The rooftop unit that service the kitchen area also provides cooling, heating, and ventilation to the Elementary school side of the cafeteria and adjacent corridor. The thermostat for this system is located in the Elementary school side of the Cafeteria.
- A second rooftop as manufactured by York with DX cooling and natural gas heat provides cooling, heating, and ventilation for the Junior High side of the Cafeteria and adjacent corridor. The thermostat for this system is located in the Junior High side of the Cafeteria.
- This equipment is approximately 18 years old and is approaching the end of its useful life.

Gymnasium:

- A natural gas heating and ventilating unit as manufactured by Sterling Manufacturing provides heating and ventilation for the Gymnasium. The ventilation for this area appears to be adequate based on design data noted on the contract drawings. Cooling for this area was not provided.
- This equipment was manufactured in October of 1996 and is approximately 18 years old. The range of useful service life for this type of equipment is 18-20 years. This equipment is approaching the end of its useful life.

Library Area (Elementary and Junior High):

- A rooftop unit (RTU) as manufactured by York with DX cooling and natural gas heating provides cooling, heating, and ventilation for the Elementary and Junior High School Library areas.

- Hot water fin tube installed along the exterior wall provides supplemental heat for the Library areas.
- This RTU also provides conditioned air for the offices areas located in the Library and adjacent corridor. The ventilation for this area appears to be adequate based on design data noted on the contract drawings.
- This equipment was manufactured in October of 1996, is approximately 18 years old, and has exceeded its useful service life. The nominal useful service life for this equipment is 15 years.

Admin Office Areas:

- A rooftop unit as manufactured by York with DX cooling and natural gas heating provides cooling, heating, and ventilation for the Elementary and Junior High School admin areas. In addition to the rooftop units, VAV boxes with integral reheat coils (variable air volume) assist in maintaining the space temperature of the individual office areas. The ventilation for this area appears to be adequate based on design data noted on the contract drawings.

Toilet Rooms:

- Exhaust air flows as noted on the contract drawing are adequate for the facility and student toilet rooms. The systems have been in operation for approximately 18 years and the actual performance should be field verified to confirm actual performance. Many of the grilles are restricted with dust and should be cleaned. This would increase the air flow of the exhaust system.

Corridors, Stairs and Vestibules:

- The corridors are being conditioned by the same rooftop units that serve the offices and classrooms along the corridor.
- Ventilation for these areas appears to be adequate based on design data noted on the construction drawings.
- Ceiling mounted cabinet heaters with a hot water coil, provides supplemental heat for the stairwells and the corridors near the vestibule areas.
- Unit cabinet heaters, and convectors located in the vestibules, corridors, stairs and toilet room, are 18+/- years old and are nearing the end of their useful service life.

Automatic Controls:

- A DDC (direct digital control) control system has been installed in this building. A review of equipment temperature set points, set back, occupied times should be reviewed for proper operation of the HVAC equipment.
- Noted on the contract drawing is that 3-way valves were to be installed for all classroom unit ventilators and at the main hydronic supply line at the boiler. The control valves and the valve actuators should be field verified for proper operation because these items directly affect the temperature of the classrooms.

Field House:

Heating and Air Conditioning Systems:

- Three split air handling systems provide conditioned air to the field house.
- The Desert Aire air handler was furnished with a natural gas fired duct furnace as manufactured by Reznor. This unit was also furnished with a DX cooling coil and condensing unit as manufactured by Desert Aire. This equipment as indicated on the data tag was manufactured in 2007 and appears to be in good condition.
- A York residential type natural gas fired furnace has been installed at this site. This unit was furnished with a DX cooling and condensing unit as manufactured by York. The equipment is approximately 13 years old and is approaching the end of its useful life. The indoor equipment appears to be in good condition.
- A Trane split system consisting of DX cooling and hydronic heating coils was installed in 1998. This equipment is approximately 16 years old and is approaching the end of it useful life.
- The equipment installed has the capacity to provide ventilation for this building. However the quantity of ventilation being provided could not be determined. The services of a balancing contractor should be considered to verify all supply and exhaust air flows.
- A model N-700 natural gas fired boiler as manufactured by Patterson Kelly was installed in October of 1998. The boiler is approximately 16 years old and is approaching the end of its useful service life. The boiler has an input of 700 MBH and an output of 595 MBH with a combustion efficiency of 85%.
- Emergency boiler off-switches have been installed at boiler exits.
- Combustion air for the boiler is not adequate. A single louver has been installed in the exterior wall. The IFGC requires a two permanent opening one with in 12" of the ceiling and one with in 12" of the floor, and sized for the total firing rate of equipment located in the room.

Weight Room:

- Ventilation for this area could not be determined.

First Floor Area (Locker Rooms, Training, Showers):

- Ventilation for these areas appears to be adequate.

Toilet, Lockers and Shower Rooms

- Exhaust appears to be adequate for these areas.

Typical Maintenance Measures:

- All coils should be cleaned.
- The control system settings should be checked for proper temperature set points, reset water temperature schedule, and occupied and unoccupied times.
- Operation of control dampers, valves, and actuators should be field verified for proper operation and settings.
- Air flows for the rooftop and exhaust fan systems should be field verified as these systems have been in operation for 18 +/- years.

- Refer to other recommendations at the end of the mechanical section of the feasibility study.

PLUMBING ASSESSMENT:

Domestic Water Service:

- A 4" domestic water service enters the water room located behind the Gymnasium. The domestic water service has a pressure reducing valve. The piping is insulated. The water meter pit is located in the access road to the school.

Domestic Water Heaters:

- WH-1 – Located in the second floor boiler room. The domestic water heater is gas fired with 600,000 btuh input and 900 gallons storage. The water heater is approximately 18 years old and appears to be leaking. This water heater serves the entire building except the kitchen.

- WH-2 – The existing kitchen water heater located in the kitchen storage room has been replaced with three (3) instantaneous wall hung water heaters, 15,200 to 199,000 per heater.

Natural Gas Service:

- The gas meter is located on the loading dock at the rear of the building. From that point a 6" riser goes onto the roof to serve the mechanical units on the roof before entering the boiler room on the second floor where it serves water heater #1, the two (2) gas fired boilers, the classrooms, labs, etc. Also from the loading dock, a 3" gas line enters the receiving room and serves the kitchen water heaters and gas fired appliances.

Sanitary and Storm Sewers:

- The 8" sanitary sewer exits the rear of the building at the kindergarten area.
- The storm sewer collects roof drains from the interior of the building. It exits various locations on the east and west side of the building.

Kitchen:

- The kitchen is a full service kitchen. The appliances are gas fired. There is a grease interceptor recessed in the floor of the kitchen and is equipped with a garbage disposal.

Plumbing Fixtures:

- The plumbing fixtures are original and most appear to be in good shape. There are a few with missing handles on faucets and broken fixtures.

Fire Protection:

- The entire building is fully equipped with sprinklers. The system is a wet system with four (4) zones. The 8" sprinkler main enters the water room. This is the same room as the domestic water service; however, the sprinkler main and domestic service enter the

room separately. There is a fire department connection on the outside of the water room. The kitchen has an Ansul Suppression System.

Field House:

Domestic Water Service:

- The 2" domestic water service enters the building in the first floor boiler room. The water service comes off the main serving the school. The domestic water service has a reduced pressure backflow preventer and a pressure reducing valve. The piping is copper tubing and insulated.

Domestic Water Heater:

- WH-1 – Located in the first floor boiler room. The domestic hot water is produced by a Patterson Kelley gas fired 1,020,000 BTUH boiler, piped through a Patterson Kelley heat exchanger with a storage capacity of 1035 gallons. The heat exchanger serves the entire building. The domestic hot water system is approximately 15 years old and in good condition.

Natural Gas Service:

- The natural gas meter is located on the exterior of the boiler room. The natural gas service enters the boiler room where it serves the domestic hot water boiler and mechanical equipment throughout the building.

Sanitary and Storm Sewers:

- The sanitary sewer exits the building and is connected to the sanitary sewer system from the school building.
- The storm sewer is collected by downspouts on the exterior of the building and is connected to the storm system from the school.

Fire Protection:

- The building has partial sprinklers. The system is a wet system and comes off the domestic water service. The system serves the boiler room and storage rooms surrounding the boiler room.

Plumbing Fixtures:

- The plumbing fixtures are the original fixtures and trim. They are in good condition.

ELECTRICAL ASSESSMENT:

Incoming Electrical Service:

- The existing electrical service is 277/480V, 3PH, 4W and rated for 3000 amps. Service is fed from a PPL pad mounted transformer. The most recent maximum demand occurred from September 2013 to October 2013 and was 757 KW which is approximately 912 amps. Based on PP&L's maximum demand readings the building is only using 30% of its "design"

capacity which will allow room for future growth. The existing PP&L transformer is rated at 1500 KVA and 1807 amps. With a maximum demand of 912 amps the existing transformer is only being used at 50% of its capacity.

Existing Power Distribution:

- The Existing 277/480V, 3PH, 4W, 3000 Amp rated Main Distribution Panel (MDP) is approximately 17 years old. The MDP has ample space for future expansion and has up to date technology.
- The existing subpanels are 120/208V, 3PH, 4W and 277/480V, 3PH, 4W are of current technology and are suitable for future additions.

Emergency Lighting and Exit Signs:

- The existing emergency lighting system is provided by a 60 KW diesel emergency generator.
- The existing exit signs appear to be adequate. Any damaged signs should be replaced.

Emergency Generators:

- The existing 60 KW diesel emergency generator is approximately 17 years old and is in good shape.

Fire Alarm System:

- The fire alarm system is approximately 17 years old and appears to be in good working order.

Lighting General Areas:

- Lighting fixtures in corridors, offices, and mechanical and storage areas are approximately 17 years old and are, generally, considered efficient. Some lenses are yellowing and should be considered for replacement to improve fixture efficiency.

Typical Classroom:

- Lighting in classrooms is approximately 17 years old and is, generally, considered efficient. Yellowing lenses should be replaced. Occupancy sensors should be added to improve building energy efficiency.

Master Clock System:

- The existing master clock system is original to the building and appears to be working properly.

Telephone and Intercom Systems:

- The telephone system has been recently replaced with a voice over internet protocol (VoIP) system.

Gymnasium Sound System:

- The gymnasium sound system is not working and should be either repaired or replaced.

Data System:

- Classroom data jacks appear to meet the district's needs.

Field House:

Incoming Electrical Service:

- The existing electrical service is 277/480V, 3PH, 4W and is fed from the Middle School. Since the buildings service comes from the middle school there is no metered demand for the building.

Existing Power Distribution:

The Existing sub panels are 277/480V, 3PH, 4W and 120/208V, 3PH, 4W provided through step down transformers. The existing sub panels are approximately 18 years old and are in good shape.

Emergency Lighting and Exit Signs:

- The existing emergency lighting system is provided by emergency battery packs. The existing exit signs appear to be adequate. Any damaged signs should be replaced.

Fire Alarm System:

- The fire alarm system approximately 18 years old and appears to be in good working order.

Lighting General Areas:

- Lighting in corridors, offices, mechanical and storage areas are approximately 18 years old and are energy efficient at today's standards. Some lenses are yellowing and should be considered for replacement to improve fixture efficiency.

Telephone and Intercom Systems:

- The telephone system has been recently replaced with a voice over internet protocol (VoIP) system.

SITE ASSESSMENT:

Solomon Elementary School/Junior High School complex is located at 41 and 43 Abbott Street in Plains Township. Access to the parcel is via an internal roadway with connections to both Abbott Street to the north and South Main Street to the west. In addition to the school building the complex includes large parking lots, asphalt play areas, running track, multiple athletic fields and a field house. The sports facilities are used for physical education and for various boys and girls varsity and junior varsity high school sports. The school's gymnasium has a separate entrance to allow for community use when the school is closed. The site is generally flat and is accessible on foot from the surrounding residential neighborhoods.

Concrete Walks:

- Sidewalks throughout the property are in generally good condition with the some sections that have settled along the backs of curbs. At entrances the surfaces are spalling likely from deicing materials. Handicapped curb ramps do not meet current design standards.
- Concrete curbing is generally in good to fair condition with sections broken and damaged from vehicular impact and settlement.
- Remove and replace concrete walks that have settled, cracked or have been damaged from deicing materials.

Walls and Stairs:

- None.

Asphalt Pavement/Parking:

- Asphalt roadways and parking lots are generally in fair condition with areas of alligator cracking, longitudinal cracks and pot holes.
- Remove and reconstruct cracked and settling asphalt drives and parking areas throughout site. Repair settlement around storm drains. Remove and replace concrete curbs damaged from impacts.

Storm Drainage:

- Pavement has settled around storm drains interrupting flows entering the drains.
- Clean out on-site storm drains.

Handicapped Accessibility:

- Accessible curb ramps do not meet current standards.
- Accessible parking spaces do not meet current standards.
- Reconstruct handicapped curb ramps to meet current standards.
- Restripe handicapped parking spaces to meet current ADA standards.

Site Furnishings and Outdoor Landscaping:

- Brick veneer is coming off of the school sign and letters are missing.
- Fences are generally in good condition. Gates need to be rehung.
- All landscape beds and lawns need refurbishing.
- Repair washed out lawn areas.
- Topsoil is worn away exposing sidewalk edges.
- The running track surface needs minor repairs and new surface spray coat and relininig.
- Repair school sign.
- Restore baseball and softball skinned infields.
- Replace team benches.
- Repair delaminated track surfaces. Recoat track surface and reline.
- Topsoil, fertilize and seed lawns and athletic throughout site. Top dress and aerate athletic fields.
- Add topsoil along exposed edges of walks and seed.
- Refurbish planting beds throughout site. Prune trees and shrubs.

ASBESTOS SUMMARY

BL conducted a limited environmental review on the Solomon Elementary and Solomon/Plains Junior High School located at 41 and 43 Abbott Street, in Wilkes-Barre City and Plains Township, Luzerne County, PA. The school was built in 1996 in a mainly residential neighborhood and is approximately 187,800 ± square feet. Based on a review of available AHERA information, no documentation of potential asbestos-containing materials was identified for this building. Based on the age of construction of the building, it is not anticipated that lead-based painted surfaces or PCB-containing light ballasts are present. BL recommends that a hazardous materials survey of the structure be conducted to identify potential asbestos-containing materials, mercury-containing fluorescent light bulbs or other potentially hazardous substances prior to any future renovation or demolition activities.

DANIEL J. FLOOD ELEMENTARY SCHOOL
WILKES-BARRE, PA

GENERAL DESCRIPTION

Original Construction -	1968
Renovations -	N/A
IBC Construction -	Construction Type IIB
Site Acreage -	8.1 acres
Gross Building Area -	53,625 +/- SF
Current Enrollment -	566
Current Grades -	K - 6
Number of Classrooms -	28 regular
	8 special education

OVERVIEW

The Daniel J. Flood Elementary School is one of the more modern elementary schools in the Wilkes-Barre Area School District in that it was built in the late 1960s and has a rational arrangement of spaces that reflect a more modern building program, a more ample administrative wing, and a site that was cleared to allow for a large cross-axial circulation route that is efficient and serviceable. The site is an urban renewal type of site common to the time period where dense older fabric was demolished for newer and more rationally planned public buildings.

One of the two major wings at Flood Elementary is a single-story structure while the other is two-story so as to take advantage of a gently sloping site. At the intersection of the corridor cross-axis are the administrative areas, the library, the music room, and the gymnasium/cafeteria/auditorium space. Classrooms at Flood Elementary are consistently sized and the day-lighting is modern in character. Two modular classrooms are in place at the end of the single-story wing.

The school's exterior presents an increasingly aging appearance particularly at some visible rusting around windows and doors. The walls are infill curtainwall construction with spandrel panels and windows, repeating between major structural steel frames. The curtainwall elements are certainly under-performing in their energy conservation characteristics.

In conclusion, Flood Elementary is a structurally sound building in need of exterior and interior maintenance. It is an inherently efficient structure by virtue of its rational interior arrangements.

Historical Status

- Daniel J. Flood Elementary School is of no particular importance historically. The school is not on the National Register of Historic Places. It is not yet 50 years old.

Statement of Functional Obsolescence:

- The larger spaces -- the library and the combined cafeteria/auditorium/gymnasium – have been modified to accommodate curriculum programs that did not exist when the school was built, such as a computer lab, a Title 1 classroom, and a music room. To make these rooms, the stage area of the combined café/gym/atrium was appropriated for music and Title 1, so that the school no longer has a stage. The library lost a corner for the computer lab, and so full monitoring of the library from the workroom/office is not possible.
- The original service kitchen is no longer viable in its equipment functionality and size. At this time meals are served in the main corridor outside the library and students then carry trays into the cafeteria. The operational logistics of the food service are less than ideal in that food serving and waste removal use the same small hallway that is also the dumpster access route.
- Flood Elementary is not obsolete on a functional basis in the way that the District's older elementary schools are, in that it has a relatively modern floor plan. Flood can also be added onto without land acquisition. The school has open space that has reasonable grades particularly at the end of the existing combined large auditorium space. At this time, Flood is not as difficult to modify as some other buildings in order to accept new school programs or curriculum changes; however modifications to date have depended on reconfiguring the interior rather than enlarging the school, with the result that the original functionality of the school is compromised. Worthy of note is the lack of daylighting in most of the school's circulation route.
- Flood Elementary is becoming increasingly functionally compromised. However, this school can be modified by way of an addition to address more modern functionality.

ARCHITECTURAL ASSESSMENT:

<u>Exterior Envelope:</u>

Roof System:

- The roof at Flood has been inspected by the WBASD independent roofing consultant, Mark J. Sobeck Roof Consulting. The roof is conditionally rated mostly in the 'C' to 'F' category and was recommended for replacement at the two-story element, which is ongoing at the time of this writing.

Windows:

- Windows at Flood are mostly original aluminum and generally have poor air infiltration characteristics, poor operating functionality, and sub-standard insulating values compared to modern windows. At this time most windows are 46 years old. The windows are recommended to be placed on a maintenance program for replacement.

Exterior Masonry:

- The exterior brick masonry is in need of attention. The structural part of this report (see below) describes the deterioration of the brick retaining walls on site; also, the brick at the building needs to be re-caulked at control joints. At this time the stucco finish on concrete overhangs at doors and windows is spalling, deteriorating, and in need of repair. This condition is unsightly and allowing water and moisture into the building.

Interior Finishes:

Walls and Plaster:

- The finishes show signs of the building's heavy use. Walls and areas of non-original construction improvements require repair.

Ceilings:

- Suspended acoustical ceilings and grids should be removed and/or repaired in numerous areas.

Flooring:

- The VCT floors should be replaced throughout the entire building.

Doors and Hardware:

- All doors are typically commercial grade wood veneer doors with narrow-lite windows, the large majority of which are original to the building. Operation of the doors is in general acceptable.
- At this time, a door-by-door cataloguing throughout the building is required to fully document the code compliance and serviceability level of all doors and door hardware. However, the general condition is fair.

Paint:

- Generally, all walls in the school are in need of paint.

STRUCTURAL ASSESSMENT

General

- Building is a two-story, concrete-framed, partially subterranean structure.
- Roof framing consists of reinforced concrete slab spanning across reinforced concrete girders and columns.
- Floor framing consists of reinforced concrete slab spanning across reinforced concrete girders and columns.

- Ground level floors are concrete slabs on grade.
- Exterior walls are brick veneer backed by non-load bearing framing.

Interior

- Visible wall, ceiling and floor surface conditions are good.
- Visible structural elements show minimal signs of corrosion, damage, cracking, settlement or deterioration.
- Localized cracks in wall finishes in stair wells are indicative of minor, non-structural movement.
- Corner cracks in the plaster finishes of the classrooms are indicative of minor, non-structural movement.
- Second floor out of level and slopes slightly from west to east, indicative of potential settlement at some time. The movement does not appear to be ongoing and, likely, occurred during construction as there are no settlement cracks or splits in interior or exterior finishes. The structure is considered stable.

Exterior

- Roofing system is in the process of being replaced on the two-story classroom wing.
- Visible brick veneer shows no excessive cracking, spalling or settlement damage.
- Most of the opening lintels show no visible signs of excessive deflection or displacement. Several of the windows and door openings are showing corrosion due to water exposure and should be cleaned, primed and painted in the near future.
- Stucco finish on concrete overhangs at windows and doors is failing in multiple locations; spalling, bubbling, blistering and flaking off. The exposed concrete surfaces underneath are prone to damage. Finish should be repaired in the near future.
- Concrete lintels and overhangs exhibit spalling, cracking and corrosion of exposed reinforcing bar in multiple locations. Concrete surfaces should be cleaned down to sound concrete and repaired with epoxy concrete patch material in the near future to prevent damage from expanding.
- Veneer vertical control joints need to be re-caulked. Joints are open and allowing water infiltration.
- The brick retaining walls surrounding the courtyard and drive locations are exhibiting failure in the brick finishes; split, cracked and spalling brick. The brick mortar joints need to be repointed and loose brick repaired and replaced in the near future to prevent brick debris from falling to the ground below and, potentially, injuring a pedestrian.

MECHANICAL ASSESSMENT:

Classrooms:

- A vertical classroom unit ventilator as manufactured by Marvair provides heating, ventilation, and cooling for the classrooms. The approximate year of installation was 2002 and this equipment is 12 years old. Ventilation for the classroom appears to be adequate.

Modular Classroom areas:

- Modular classroom area: Heating and cooling for the modular classroom areas is being provided with a self-contained single zone air handler as manufactured by Bard Manufacturing Company. Each classroom has its own air handler and space mounted thermostat. The air handler is a wall mount package type unit. The equipment was operating at the time of the site visit – proper ventilation of the areas could not be verified. The equipment was manufactured July of 2001 as noted in a power panel, and is approximately 13 years old. This equipment is approaching the end of its service life of 15 years as indicated in ASHRAE Applications handbook. A listing of useful service life of equipment is included at the end of the mechanical study.

Kitchen:

- A unit heater provides hear to the kitchen. This equipment appears to be 20+ years old. The unit heater has exceeded its useful service life of 13 years. An exhaust fan for the dishwasher is approaching the end of its useful service life of 20 years.
- No cooking is performed in this kitchen, only food warming is provided at this facility. A kitchen exhaust hood has not been furnished for this kitchen.

Multi-Purpose Room:

- A Two split type air handling system provides conditioned air to these areas. Air is distributed via ceiling diffusers. Return air is ducted back to the air handlers. Outdoor air for ventilation is introduced by means of gravity intakes through the roof. The condensing units are located on the roof above the air handlers. The exact age of the air handlers could not be determined but appear to be 40 (+/-) years old. The air handlers appear to be original equipment. The nominal service life for indoor air handlers is 20 years. These systems have exceeded their useful life and should be scheduled for replacement.
- The older condensing units have a date code of July – 1993 and are approximately 21 years old. The nominal service life for this type of equipment is 15 years. This condensing unit has exceeded its useful life and should be scheduled for replacement.
- The newer of the two condensing units has a date code of code November 2002, is approximately 12 years old, and is approaching the end of its useful service life.

Audio Visual and Stage Areas:

- A Trane rooftop unit provides conditioned air to the stage area. The rooftop unit has a manufactured date code of April 1999. This unit has been in service for 15 years and is nearing the end of its useful service life. The stage area is currently being used as a classroom and the amount of ventilation could not be determined.

Library:

- A split type air handling system provides conditioned air to this area. The air handler unit and condensing unit exact age could not be determined. The equipment appears to have been fabricated around 1968-73. This system has been in service for 40 +/- years and has exceeded its useful life. A gravity intake was installed as a means to provide ventilation and appears to be adequate (as noted on the original construction drawings).

Admin, Nurse, Teacher's Lounge Areas:

- A split type air handling system provides conditioned air to these areas. The air handler is located in the mechanical room with the condensing unit located above on the roof. Air is distributed via ceiling diffusers and the return air is ducted back to the air handler. Outdoor air for ventilation is introduced by means of gravity intake located on the roof above the air handler. The condensing unit is located on the roof above the air handler. The exact age of the air handler and condensing unit could not be determined. It appears to be 40 (+/-) years old and original equipment. The nominal service life for this type of equipment is 20 years. These systems have exceeded their useful life and should be scheduled for replacement.

Staff Areas - 2nd Floor:

- A Trane rooftop unit provides conditioned air for these areas. The rooftop unit has a manufactured date code of August 1995. This unit has been in service for 19 years and has exceeded its useful service life. This equipment has a nominal service life of 15 years and should be scheduled to be replaced. The amount of ventilation for these areas could not be determined.
- There are two faculty toilet rooms located in this area. The toilet rooms are being exhausted by means of a roof mounted exhaust fan; and the air flow appears to be inadequate for these spaces. The fans are approximately 46 years old, have exceeded their useful service life, and should be scheduled for replacement. Actual air flow should be field verified by an air balancing company.

Toilet Rooms:

- Heat for the toilet rooms is provided with wall mounted electric convectors. Exhaust fans and grilles have been installed in the toilet rooms. The exhaust provided for the toilet areas appears to be adequate (as indicated on the contract drawing dated July-1967); but the air flow appears to be inadequate for these spaces. The fans are approximately 46 years old; have exceeded their useful service life; and should be scheduled for replacement. Actual air flow should be field verified by an air balancing company.

Corridors, Stairs and Vestibules:

- Ceiling and wall mounted cabinet heater provide heat for these areas. The corridors are not directly ventilated. Ventilation of the corridors is required as indicated in the International Mechanical Code.

Boys and Girls Locker Rooms:

- Exhaust appears to be inadequate for these areas.

Emergency Generator:

- An emergency generator is located in the electrical room. An outdoor air intake for the generator's combustion and make-up air has been installed and appears to be adequate. The radiator exhaust is not ducted to the exterior of the building.

Ductwork, Diffusers, Grilles:

- These items are approximately 46 years old and have surpassed the end of their useful service life. The average useful life for these items is 27-30 years.

Fan Belt Guards:

- Belt guards are missing on air handling equipment. All missing guards should be replaced.

Building Controls:

- A pneumatic control system was installed for this building. The air compressor and steel receiver are located in the generator room. The pneumatic control system was installed in 1967- 68 and is approximately 40 years old. Pneumatic control systems have a service life of 20 years. This system has surpassed its useful life.
- A DDC Facility Management System was installed at this location in 2002 to interface with the existing pneumatic system. DDC systems have a service life of 15-16 years; this system is 12 years old and is approaching the end of its useful service life. This system includes:
    - Carbon dioxide (CO2) control for the Gym/ Cafeteria Area
    - Occupancy and Un-occupancy scheduling for the HVAC systems
    - Facility Management System that monitors, controls, and issues alarm reports and alarm reporting via e-mail or paging over an intranet or internet

PLUMBING ASSESSMENT:

Domestic Water Service:

- A 4" domestic water service enters the maintenance room from Wyoming Street. The water meter and reduced pressure backflow preventer are located in that room. The piping system is copper tubing. Some of the piping mains in the maintenance room are not insulated, however the piping that is insulated appears to have asbestos on the fittings.

Domestic Water Heater:

- There is an electric domestic water heater located in the maintenance room serving the building. The domestic water heater is a Patterson Kelly, 480V/3 phase. The water heater is dated 1968. The domestic hot water has a mixing valve and is re-circulated. There is no expansion tank for the water heater.

Natural Gas Service:

- The natural gas service enters the maintenance room from Wyoming Street. The meter is located on the exterior of the maintenance room. The natural gas service serves the emergency generator and the incinerator. The incinerator is no longer in service.

Sanitary and Storm Sewers:

- The sanitary sewer exits the building to Wyoming Street.

- The storm sewer collects roof drains and is piped through the interior of the building. It exits the front of the building and connects to a 24" main near Hollenbeck Avenue.

Kitchen:

- The meals are brought in and served in the Gymnasium. There is a small service kitchen across the hall from the gymnasium with a double bowl sink with a grease interceptor.

Plumbing Fixtures:

- The plumbing fixtures for the most part appear to be original fixtures and trim. The fixtures and trim should be replaced to meet allowable flow rates and consumption for plumbing fixture fittings set by the International Code. The fittings should comply with the Americans with Disabilities Act.

Fire Protection:

- There is no fire protection system.

ELECTRICAL ASSESSMENT:

Incoming Electrical Service:

- The existing electrical service is 277/480V, 3PH, 4W and rated for 3000 amps. The most recent maximum demand occurred from February 2014 to March 2014 was 420 KW which is approximately 506 amps. Based on PP&L's maximum demand readings the building is only using 17% of its designed capacity which will allow room for future growth. The existing transformer is rated for 1000 KVA and 1,205 amps and with the maximum demand of 506 amps the existing transformer is only being used at 42% of its capacity.

Existing Power Distribution:

- The Existing 277/480V, 3PH, 4W, 3000 Amp rated Main Distribution Panel (MDP) is approximately 46 years old and should be replaced due to age and availability of spare parts. The existing subpanels are 120/208V, 3PH, 4W and 277/480V, 3PH, 4W are also 46 years old and should be replaced due to the availability of spare space and parts.

Emergency Lighting and Exit Signs:

- The existing emergency lighting system is fed by a 15 KW natural gas emergency generator. The exit signs appear to be adequate but some are not working properly and are damaged. These exit signs should be replaced.

Emergency Generators:

- The existing 15 KW natural gas fired emergency generator serves emergency lighting, phone and sound system. The generator is original to the building and is approximately 46 years old.

Fire Alarm System:

- The existing fire alarm system appears to have been replaced within the past 10 years. The pull stations should be lowered per ADA requirements.

Lighting General Areas:

- Lighting in corridors, offices, mechanical and storage areas were upgraded approximately eight years ago with electronic ballasts and energy saving T8 – 32 watt fluorescent lamps. The lighting in these areas appears to be adequate. Yellowing lenses should be replaced to improve fixture efficiency.

Typical Classroom:

- Lighting in classrooms was upgraded approximately eight years ago with electronic ballasts and energy saving T8 – 32 watt fluorescent lamps. Lighting levels in classrooms appear to be adequate. Any yellowing lenses should be replaced to improve fixture efficiency.
- The classroom lighting fixtures are currently controlled by a wall switch and ceiling mounted occupancy sensor for added energy savings.
- Currently most classrooms don't appear to have an adequate quantity of general purpose receptacles. Additional receptacles should be added if local power panels can accommodate the added circuits.

Master Clock System:

- Master clock system is old. It appears to be working properly.

Telephone and Intercom Systems:

- Telephone system has been recently replaced with a voice over internet protocol (VoIP) system.

Data System:

- Classroom data jacks appear to meet the district's needs.

Security System:

- The building has a key fob access system.

SITE ASSESSMENT:

Daniel J. Flood Elementary School is located at 565 North Washington Street between East Hollenback Avenue and East Linden Street within the residential neighborhoods of Wilkes-Barre's north end. The site's topography is gently sloping with development occurring on two terraces. The lower terrace fronts on Olin Street, the upper on North Washington Street. In addition to the school building the parcel includes large parking lots, outdoor play spaces and a full size athletic field that can accommodate multiple field sports. Modular classrooms are attached to the north end of the building.

Concrete Walks:

- Sidewalks along the city streets in the immediate area of the school are in good to fair condition. Handicapped curb ramps do not meet current design standards. On-site walks are generally in poor condition due to settlement.
- Replace settling and deteriorating concrete walks throughout the site.
- Replace damaged concrete curb throughout the site.

Walls and Stairs:

- The concrete stairs are in fair to poor condition. Top landings have settled creating tripping hazards. Handrails do not have extensions at top and bottom.
- Brick facing and copings on retaining walls are deteriorating.
- Repair brick veneer on all site walls.
- Replace deteriorating stairs and handrails.

Asphalt Pavement/Parking:

- Asphalt roadways, parking lots and play areas are generally in poor condition and at the end of their design life.
- Replace asphalt pavement throughout the site.
- Relocate accessible parking and construct to meet current ADA regulations.

Storm Drainage:

- Storm drainage sheet flows out to adjacent streets.

Handicapped Accessibility:

- Accessible entrances do not meet current standards. Accessible curb ramps do not meet current standards.
- Accessible parking spaces do not meet current standards.
- Reconstruct ramp between the parking lots to meet current accessible standards.

Site Furnishings and Landscaping:

- Wood benches in the play area are warped and the finishes are worn.
- Fences are damaged and knocked off line.
- All landscape beds and lawns need refurbishing.
- The athletic field is in generally good condition requiring only routine maintenance.
- Replace wall mounted benches in the circular play area.
- Overseed and fertilize all lawn areas.
- Supplement the wood fiber mulch around the tot play area.

ASBESTOS SUMMARY

BL conducted a limited environmental review of the Daniel J. Flood Elementary School located at 565 North Washington Street, in Wilkes-Barre, Luzerne County, PA. The school was built in 1968 in a mainly residential neighborhood and is approximately 53,625 ± square feet. Based on a review of available AHERA information, asbestos-containing materials are known to be present

in the building. Based on the age of construction of the building, it is anticipated that lead-based painted surfaces, PCB-containing light ballasts, mercury-containing fluorescent light bulbs and other potentially hazardous substances are also present. BL recommends a hazardous materials building survey, including the confirmation of the types and quantities of hazardous materials, be conducted prior to any future renovation or demolition activities.

BOYD DODSON ELEMENTARY SCHOOL

WILKES-BARRE, PA

GENERAL DESCRIPTION

Original Construction -	1937
Renovations -	1984
IBC Construction -	Construction Type IIB
Site Acreage -	1.391 acres
Gross Building Area -	53,620 +/- SF
Current Enrollment -	517
Current Grades -	K - 6
Number of Classrooms -	25 regular
	6 special education

OVERVIEW

Boyd Dodson Elementary School is a two-story steel-frame brick structure with a partially above-ground basement. The school is located in the Rolling Mill Hill/Iron Triangle neighborhoods southwest of the downtown and on the high land of the city's eastern hill. Built in 1937, Dodson Elementary is a substantial school that is challenged to accommodate its population, its modern curriculum, and its special educational needs.

The school's exterior presents a generally good appearance, with some areas of masonry repointing required to maintain the envelope integrity. This exterior belies an interior that has undergone a series of modifications to accommodate contemporary needs with results that are less than ideal because the existing building will allow for only so much reconfiguration.

The building is L-shaped with core elements logically located at the intersection of the two wings. However, the restrooms are all sized as they would be 75 years ago, as are all amenities. Special needs classrooms have been carved out of storage spaces, so that there are classrooms that are the size of the administrative copy room.

Boyd Dodson Elementary has two single-story modular units with two classrooms each. These units occupy a significant portion of the available playground area.

In conclusion, Dodson Elementary is a structurally sound building in need of exterior and interior maintenance. It is however an inherently inefficient structure for adaptive re-use because of its adaptation to the hill and its resistance to ADA requirements for accessibility which are now embedded in the building codes. In terms of its functional obsolescence, Dodson is serviceable as a school but difficult to develop modern curricular spaces within.

Historical Status

- Boyd Dodson Elementary School is an architecturally substantial brick building typical in its appearance for an early 20th century school of its size. It is attractive but of no particular historical importance architecturally. The school is not on the National Register of Historic Places.

Statement of Functional Obsolescence

- The school is sited on a hill and the floor plan adjusts to the hill as best as it can in a way typical for the construction of a neighborhood school built in a dense urban pattern in a hilly city -- the consequence of which is that this building is extremely resistant to adaptive re-use and the accommodation of a modern curriculum, and as a consequence of its configuration and its age, it is in an advance state of functional obsolescence.
- An example of a quirky situation that is due to the sloped site is the way students must access the gymnasium; they walk down through an interior stair tower into the basement corridor where one must then descend another half run of stairs in the gym. While this could be understood as a clever use of space in a crowded city in the mid-20th century, it now presents an awkward path and remote location to the gym. The school's auditorium does double duty as the student cafeteria. There is no dedicated warming kitchen in the school.

Code Compliance

- As with most of the buildings in the Wilkes-Barre Area School District, code compliance at Dodson is to an approximation of the current code; however, in general terms the District's assets have been upgraded to meet required life-safety standards as best as possible to improve all life-safety issues.
- The City of Wilkes-Barre has adopted the IEBC (International Existing Building Code), and forbearance on elements of code compliance may be granted under the jurisdictional mandate of the city code enforcement office for certain unusual existing conditions. No life- safety issue deemed of concern is left unaddressed by the Wilkes-Barre School District staff or the city's inspectors who perform regular inspections. However, the IEBC will allow areas that have not been improved to remain 'as is' until renovations of a certain scale are performed, at which time comprehensive improvements may be required either by strict code analysis per the tables, or by the code enforcement official.
- Accessibility and compliance with ADA is problematic for Dodson. Currently there is only one accessible entrance through the modular addition to the rear. This provides for access to the basement level. No other level is accessible to any degree, nor is accessibility easily developed because of the interior stair towers through which one enters the building from the street.
- Areas of code non-compliance include the current lack of rated separations between corridors and stairs, where fire safety can be improved. The number of exits and the configuration of the egress routes are in good order in their length of travel and absence of dead-end corridors. The stair towers themselves are not modern but are acceptable under the Existing Building Code.

ARCHITECTURAL ASSESSMENT:

Exterior Envelope:

Roof System:

- The roof at Dodson has been inspected by the WBASD independent roofing consultant, Mark J. Sobeck Roof Consulting. The roof is conditionally rated mostly in the 'C' to 'F' category.
- This represents a generally poor rating for the roofing system.

Windows:

- Windows at Dodson are mostly original and generally have poor air infiltration characteristics, poor operating functionality, and sub-standard insulating values compared to modern windows. At this time most windows are wood and 78-years-old. The windows at Dodson are recommended to be placed on a maintenance program for replacement.

Exterior Masonry:

- While generally in good condition and devoid of structural cracking, the masonry at Dodson is in need of an exterior masonry repointing program at this time.

Interior Finishes:

Walls and Plaster:

- Dodson's finishes show signs of the building's heavy use and large population. Walls and numerous ad-hoc construction improvements require attention and suffer from deferred maintenance.

Ceilings:

- Some ceilings should be removed and/or repaired for ACM removal and abatement per the AHEERA report. Ceilings require repair in numerous areas.

Flooring:

- Dodson's VCT floor should be replaced throughout the entire building.

Doors and Hardware:

- All doors are typically thick heavy-duty wood with half-lite windows, the large majority of which are original to the building. Where new locksets have been installed, they have been installed after the 1984 renovation.
- Some of the doors into stair towers are steel doors with fire-rated glass half-lites, original to the building. They do not meet contemporary requirements for rated fire-doors and fire-rated separations.
- The door hardware is still of the knob type into many classrooms. Lever handles are not installed on all doors and to this extent the hardware does not comply with ADA (Americans with Disabilities Act).
- At this time, a door-by-door cataloguing throughout the building is required to fully document the code compliance and serviceability level of all doors and door hardware. However, the general condition is one of a multitude of configurations that could present security management challenges.

Paint:

- Generally, all walls in the school are in need of paint.

STRUCTURAL ASSESSMENT

General

- Building is a three-story, concrete and steel-framed, partially subterranean structure.
- Roof framing consists of reinforced concrete deck spanning over open-web steel joists spanning between structural steel girders supported by structural steel columns.
- Floor framing consists of reinforced concrete deck spanning over open web steel joists spanning between structural steel girders supported by structural steel columns.
- Ground level floors are reinforced concrete slabs on grade.
- Fallout shelter floors are dirt.
- Exterior walls are brick veneer backed by non-load bearing framing.

Interior

- Visible wall, ceiling and floor surface conditions are good.
- Visible structural elements show minimal signs of corrosion, damage, cracking, settlement or deterioration.
- Localized cracks in stone finish tiles in stair wells are indicative of minor, non-structural movement.
- Corner cracks in the plaster finishes of the stair wells are indicative of minor, non-structural movement.
- Concrete encasement of structure in Boiler/Storage areas shows water infiltration, efflorescence and corrosion in localized area. Damage is considered non-structural but should be monitored for increases in cracking and spalling.

Exterior

- Visible brick veneer shows no excessive cracking, spalling or settlement damage.
- Most of the opening lintels show no visible signs of excessive deflection, displacement or corrosion. Several of the windows and door openings surrounding the playground are showing corrosion due to water exposure and should be cleaned, primed and painted in the near future.
- Stone caps, sills and cornice joints are open in multiple locations, permitting water infiltration. Joints should be repointed in the near future.
- Veneer vertical control joints need to be re-caulked. Joints are open and allowing water infiltration.
- The retaining wall concrete foundation, adjacent to the ADA access ramp, is spalling and cracking near the street. The concrete supporting the brick should be cleaned to sound concrete, reformed and patched with epoxy concrete or deterioration will continue. The brick construction of the retaining wall perimeter requires pointing in the near future.

MECHANICAL ASSESSMENT:

Heating System:

- The heating system consists of two natural gas fired, water tube type, low pressure steam boilers, as manufactured by Ajax. The boilers are rated for a maximum steam working pressure of 15 psig. One of the boilers was re-tubed in January of 2010. The boilers were installed in 2003 and are approximately 11 years old. These types of boilers have an average service life of 26 years. Over 50 percent of their service is remaining.
- Boiler No. 1is ModelHRG-3350, Serial No: 58820, 80 HP boiler with a minimum input firing rate of 2680 MBH and 2144 MBH output, and maximum input firing rate of 3350 MBH with a 2680 MBH output.
- Boiler No. 2 is Model HRG-3000,Serial No: 58653, 72 HP boiler, with a minimum input firing rate of 2400 MBH input and 1920 MBH output, and maximum input firing rate of 3000 MBH with a 2400 MBH output.
- The boiler provides low-pressure steam to classroom unit ventilators, radiators, baseboard and convectors.
- A boiler feed unit with chemical treatment for the make-up water is interlocked with the boiler operation.
- A single outdoor air louver provides combustion air for the boilers. The IFGC (International Fuel Gas Code) requires that two permanent openings be provided for combustion air in the boiler room; one within 12" of the ceiling and the other within 12" of the floor. This installation does not meet that requirement.
- An emergency boiler shut-off switch has been provided at the Boiler Room exit.
- The boilers are a natural draft type.
- Typically these types of boilers are used in process work and not in a heating system application. In conversations with the boiler service company it was noted in order to operate the boilers the firing rate is locked on low fire. Also the main steam valves are partially closed to help maintain the water level in the boilers.

- As noted above, although the boilers are relatively new and chemical treatment is provided for the boiler make-up water; a major repair has been made to one of these boilers. During the 2010 heating season, one of the boilers was re-tubed.

Classrooms/ Office Areas:

- Basement: Floor mounted classroom unit ventilators with steam coil provides heating and ventilation for the classrooms.
- Upper Levels: Floor mounted classroom unit ventilators with a steam heating coil provides heating for the classrooms. Additional heat is provided with steam baseboard installed along the exterior wall. The unit ventilators and operable windows (during temperate weather) provide ventilation for these areas.
- In classrooms and offices without classroom unit ventilators heat is provided with floor mounted cast iron radiators. This type of heating system does not have any provision for providing tempered outdoor air for ventilation. Ventilation is provided for these rooms via operable windows.
- Because the unit ventilators are antiquated, outdoor air damper setting and air flow should be verified by means of an air balance report.
- Modular classroom area: Four (4) modular classrooms have been installed at this site. Heating and cooling for these areas is being provided with a self-contained single zone air handler as manufactured by Bard Manufacturing Company. Each classroom has its own air handler and space mounted thermostat. The air handler is a wall mount package type unit. The equipment was operating at the time of the site visit – proper ventilation of the areas could not be verified. The equipment was manufactured in June of 2004 as noted in a power panel, and is approximately 10 years old. This equipment is approaching the end of its service life of 15 years as indicated in ASHRAE Applications handbook. A listing of useful service life of equipment is included at the end of the mechanical study.
- Some of the larger interior storage rooms have been converted into small classrooms. Currently ventilation for these spaces has not been provided as required in the mechanical code.

Server Room:

- In conversations with the IT department; it was noted that there is an issue with heat build-up in the server room. When the room temperature exceeds the operating range of the server, the equipment shuts down. This shut down disrupts the phone service and computer lab equipment.
- A ductless split type air conditioner should be considered for these areas to help alleviate this problem.

Multipurpose Room (Cafeteria and Auditorium):

- This room is heated with cast iron steam radiation.
- A food serving area is located near the stage. Cooking equipment: kitchen type hood with exhaust was not installed at this school.
- Ventilation is provided by means of operable windows.

Corridors/ Stairwells/ Storage Areas:

- The corridors and stairwells are heated with steam convectors.
- No means for ventilation of the corridors or storage areas has been provided as required in the mechanical code.

Admin Offices:

- The office areas are heated with cast iron steam radiators.
- Ventilation for these areas is by means of operable windows.
- A window air conditioning unit has been installed for this area.
- An exhaust fan was installed for the toilet room in this area. The exhaust appears to be inadequate.

Facility Lounge and Toilet:

- Steam radiators are utilized for heating these areas.
- A window type air conditioning unit provides cooling for one of the lounge areas.
- No means for ventilation or exhaust was provided for the toilet room as required in the mechanical code.

Student Toilets Rooms:

- Currently grilles are located below the water closets in the toilet rooms. The ductwork from the grilles terminates in the plumbing shaft. No exhaust fans are provided for the toilet rooms. The mechanical code requires that these areas be exhausted to the exterior of the building.
- Make-up air will also be required to be provided for these systems.
- No means for ventilation or exhaust was provided for these areas as required in the mechanical code.

Janitor's Closet:

- No means for ventilation or exhaust was provided for these areas as required in the mechanical code.

Emergency Generator:

- There is no means of providing outdoor air for combustion or make-up air for the radiator exhaust when the generator is operating. Combustion air is required for the operation of gas fired equipment as noted in the IFGC.
- Exhaust ductwork from the generator radiator to exterior of building has not been installed. As currently installed, the heat from the generator is rejected to the building. As the space temperature increases, the ability to cool the generator will be hampered.
- Emergency generator manufacturers currently require the heat from the generator be exhausted to the exterior of the building to alleviate temperature build up in the generator room.

Building Controls:

- A pneumatic control system was installed for this school and appears to be original to the building. This is an antiquated type of control system and when mechanical

equipment upgrades are required a Direct Digital Control system should be considered as a replacement for this system.

PLUMBING ASSESSMENT:

Domestic Water Service:

- A 4" domestic water service enters the storage room from Airy Street. The water meter and reduced pressure backflow preventer are located in that room. The 4" standpipe line is tapped into the domestic with no backflow protection. The piping system observed was copper tubing with no insulation.

Domestic Water Heaters:

- There are two domestic water heaters serving the building, both are located in the boiler room.
  - A.O. Smith gas fired atmospheric, 100 gallon with gas input of 78,000 btuh.
  - Ruud gas fired atmospheric, 50 gallon with a gas input of 38,000 btuh. The vent from this water heater terminates below a first floor window.

Natural Gas Service:

- The main gas service enters the boiler room from Harkins Lane. The meter is located on the exterior of the boiler room. This service serves the boilers and the larger water heater.
- The second gas service enters the boiler room from Airy Street. The meter is located in the boiler room. This service serves the smaller water heater and the emergency generator.

Sanitary and Storm Sewers:

- The sanitary sewer exits the building onto Jones Street.
- The storm sewer piping has exterior scupper drains piped below grade. It is assumed that the drains are collected and piped to Jones Street.

Kitchen:

- The meals are brought in and served in the Multi-Purpose Room. There is a small room next to the stage with a double bowl sink. The sink has a garbage disposal and a grease interceptor.

Plumbing Fixtures:

- The plumbing fixtures for the most part appear to be original fixtures and trim and should be replaced to meet the allowable flow rates and consumption for plumbing fixture fittings set by the International Plumbing Code. The fittings should comply with the Americans with Disability Act.

Fire Protection:

- A standpipe system with two recessed hose cabinets in the corridors on each floor and one (1) surface mounded hose cabinet in the boiler room.

ELECTRICAL ASSESSMENT:

Incoming Electrical Service:

- The existing electrical service is 120/208V, 3PH, 4W and rated for 1200 amps. The most recent maximum demand occurred between January 2014 to February 2014 was 120 KW which is approximately 333 amps. Based on PP&L's maximum demand readings the building is only using 28% of its designed capacity which will allow room for future growth.

Existing Power Distribution:

- The Existing 120/208V, 3PH, 4W, 1200 Amp rated Main Distribution Panel (MDP) is in good condition and appears to have been replaced within the past 10 years. New breakers for the GE Spectra series panel are readily available and can be added if required. The building's main service disconnect switch and utility company metering cabinet (CT) are located in the old coal storage room. The existing subpanels are 120/208V, 3PH, 4W and are a variety of old original panels and panels recently installed within the past 10 years. Breakers for the newer panels can be added to the GE A Series panels and are readily available and can be added if required. Breakers for the original outdated panels are unlikely and should be replaced due to the availably of spare parts.

Emergency Lighting and Exit Signs:

- The existing emergency lighting system is provided by emergency battery power packs and a 12.5 KW natural gas emergency generator. The remote mounted emergency lighting battery packs appear to be good. The existing exit signs appear to be in good working order.

Fire Alarm System:

- The existing fire alarm system appears to have been replaced within the past 10 years and appears to be properly laid out per ADA standards.

Lighting General Areas:

- Lighting in corridors, offices, mechanical and storage areas have a variety of old and newer fixtures. The older fixtures are using 40 watt T12 lamps that are outdated and are being phased out per EPACT (The Energy Policy Act) standards.

Typical Classroom:

- Lighting in classrooms is antiquated. Existing fixtures currently use 40 watt T12 lamps that are being phased out under EPACT. Fixtures should be replaced with new 32 watt T8 lamp fixtures. It also appears that when an existing fixture fails the ballast is replaced with an electronic ballast, new sockets and lamps. The new lamps are 32 watt T8.

- Currently most classrooms don't appear to have an adequate quantity of general purpose receptacles. Additional receptacles should be added if local power panels can accommodate the added circuits.

Master Clock System:
- Master clock system is not working and should be replaced.

Telephone and Intercom Systems:
- Telephone system has been recently replaced with a voice over internet protocol (VoIP) system.

Data System:
- The building's main distribution frame (MDF) is not properly cooled. During warmer months the buildup of heat causes the system to shut down. Also, during shut down the phone system is inoperable because it is tied into the MDF.
- It appears that the classroom data jacks meet the district's needs.

Security System:
- The building has a CCTV system and key fob access.

SITE ASSESSMENT:

Dodson Elementary School is located at 80 Jones Street at the intersection of Jones Street and Airy Street and abutted by Harkins Lane. The entire site surrounding the building is paved and is used for parking and outdoor play. A modular classroom occupies a portion of the paved area.

Concrete Walks:
- Sidewalks surrounding the school are in good condition.

Walls and Stairs:
- The stairs and walls are in good condition however there are no handrails as required to meet safety codes.
- Railings protecting areaways do not meet current safety codes.
- Install handrails on all site stairs meeting current safety code requirements.
- Repair the wall foundation along Harkins Lane.
- Re-parge wall face on wall adjacent to driveway off of Jones Street and on areaway.
- Replace handrail on top of areaway wall and on stairs near handicapped ramp with new guardrail meeting current safety requirements.

Asphalt Pavement/Parking:
- Pavements adjacent to Harkins Lane, in the rear parking lot and play area are in poor condition. Concrete foundations from removed equipment protrude through the pavement.

- Pavements in the parking areas along the streets are in generally good condition with only minor cracking. Parking spaces are accessed across adjacent sidewalks and directly on to/off of city streets.
- Replace the asphalt pavement adjacent to Harkins Lane and in the parking area on the North side of the building.
- Seal cracks in the asphalt pavement adjacent to Airy Street and Jones Street.
- Provide accessible parking spaces per ADA requirements.

Storm Drainage:

- Generally sheet flow to street with the exception of the play area on the west side of the building that is directed to a single storm inlet.
- Clean the storm drain in the parking area.

Handicapped Accessibility:

- There is an accessible building entrance but no accessible parking space.

Site Furnishings and Landscaping

- Sections of fencing at the parking lot are rusted, coming apart, and knocked off-line.
- Repair damaged fence sections. Replace missing hardware.
- Tot play area has modern equipment on rubber safety surface.

ASBETOS SUMMARY

Borton-Lawson conducted a limited environmental review of available AHERA documents for the Dodson Elementary School located at 80 Jones Street, in Wilkes-Barre, Luzerne County, PA. The school was built in 1937 in a residential neighborhood and is approximately 53,620 ± square feet. Based on a review of available AHERA information, asbestos-containing materials are known to be present in the building. Based on the age of construction of the building, it is anticipated that lead-based painted surfaces, PCB-containing light ballasts, mercury-containing fluorescent light bulbs and other potentially hazardous substances are also present. BL recommends a hazardous materials building survey, including the confirmation of the types and quantities of hazardous materials, be conducted prior to any future renovation or demolition activities.

DR. DAVID W. KISTLER ELEMENTARY SCHOOL
WILKES-BARRE, PA

GENERAL DESCRIPTION

Original Construction -	1975
Renovations -	Miscellaneous renovations, 2011 Modular Addition
IBC Construction -	Construction Type IIB
Site Acreage -	7.13 acres
Gross Building Area -	150,750 +/- SF
Current Enrollment -	909
Current Grades -	K - 6
Number of Classrooms -	60 regular
	5 special education

OVERVIEW

David W. Kistler Elementary is a three-story, steel-frame, brick-veneer structure with floor plans designed according to a 'pod' concept that clusters classrooms around centralized corridors and restroom cores, in an effort to maximize efficiency and flexibility in space utilization through the use of folding walls. Four large three-story classroom pods, or towers, are arranged in pairs at right angles to form an L-shaped plan; along the inside of the 'L' runs the main connecting corridor which ties all classrooms together. To the interior of this L-shaped corridor – in the space inside the 'L' -- are the administrative offices and library on the second floor and a large group instruction area on the third floor. Below the library, at the ground floor, is a covered outdoor playground area.

Beyond the two ends of the L-shape are two significant additional building areas that are linked along the main corridor – the cafeteria/gymnasium/service wing and the natatorium wing with locker rooms. The building is still generally an attractive and serviceable modern building, well designed and well-constructed in its time. Eighteen classrooms at Kistler Elementary School are lacking windows due to the floor plan layout.

Historical Status

- Kistler Elementary School is of no importance historically at this time. The school is not on the National Register of Historic Places. It is not yet 50 years old.

Statement of Functional Obsolescence

- The Kistler Elementary School is functionally basically utilized in much the same way as was intended when it was designed. Special education and Title 1 are examples of new curricular needs that did not exist in the same way when the school was built, and so smaller special education classrooms are not available to an optimal extent, nor are they

located in a preferred way. Modular classrooms to the rear of the building were placed in 2011 to increase capacity and curricular flexibility.

- Compared to other schools in the Wilkes-Barre Area School District, Kistler Elementary is obviously one of the newer assets. It is adjacent to a park and so appears to be surrounded by more open land than is available. While additions may be possible, the physical plant has been able to adapt to evolving needs without signs of significant functional obsolescence at this time. It should be noted that the particular planning approach with trapezoid-shaped classrooms can be inefficient and leaves many classrooms lacking wall hanging and marker board space.
- Educational program issues include the number of windowless classrooms and the need to upgrade the education technology in the building.

Code Compliance

Code compliance at Kistler is mostly concerned with the following areas:

- Replacement of door hardware and ADA-compliant signage.
- Upgrading of the stair railings and guardrails to meet current code.
- Upgrade mechanical systems for fresh-air ventilation and energy performance code requirements.
- Upgrade the fire-alarm system.
- Upgrade the toilet rooms for ADA compliance.

ARCHITECTURAL ASSESSMENT:

Exterior Envelope:

Roof System:

- The roof at Kistler has been inspected by the WBASD independent roofing consultant, Mark J. Sobeck Roof Consulting. The roof is conditionally rated almost entirely in the 'C' to 'F' category and requires replacement.

Windows:

- Windows at Kistler are mostly original aluminum and are non-operating. Caulking is an ongoing maintenance item, and thermal performance is sub-standard compared to modern windows. The fact that the windows do not operate contributes to their stability. Thermal breaks are likely brittle. At this time most windows are 38 years old. The windows are recommended to be placed on a maintenance program for replacement.

Exterior Masonry:

- The exterior brick masonry is in good condition; see the structural assessment below. There is some cracking of the concrete block in the stair towers but it is not considered to

be active. An annual masonry restoration program has been recommended, and expansion joints may require resealing.

Interior Finishes:

Walls and Plaster:

- The finishes show signs of the building's heavy use. Some areas of the exterior walls show signs of failing insulation and/or vapor barrier and require replacement.

Ceilings:

- Some suspended ceilings should be removed and/or repaired due to miscellaneous leaking.

Flooring:

- Carpeting should be replaced throughout the entire building.

Doors and Hardware:

- All doors are typically commercial-grade wood veneer doors with narrow-lite windows, the large majority of which are original to the building. Operation of the doors is general acceptable. At this time it is recommended to replace all doors, door frames, and hardware, when possible.

Paint:

- Walls generally are addressed through maintenance; some are in need of paint.

STRUCTURAL ASSESSMENT

General

- Building is a three-story, steel framed structure. The cafeteria/gymnasium wing and natatorium are precast concrete joists.
- Roof framing consists of metal deck spanning over open-web steel joists spanning between structural steel girders supported by structural steel columns.
- Floor framing consists of concrete-filled metal deck spanning over open web steel joists spanning between structural steel girders supported by structural steel columns.
- Ground level floors are reinforced concrete slabs on grade.
- Exterior walls are brick veneer backed by non-load bearing stud framing.

Interior

- Visible wall, ceiling and floor surface conditions are good.

- Visible structural elements show minimal signs of corrosion, damage, cracking, settlement or deterioration.
- Water stains on ceiling tiles in stair wells are indicative of minor water infiltration.
- In several locations, particularly in the stair towers, vertical and step cracking of the concrete masonry units has occurred. In general, the cracks do not appear to be active, indicating continuing movement, but it is recommended that the cracks be monitored to insure no continued movement.
- Natatorium roof structure exhibits staining and discoloration from high moisture air content. The staining is non-structural but cleaning and refinishing is recommended to prevent permanent discoloration.

Exterior

- Visible exterior finish conditions are good.
- Visible brick veneer shows no excessive cracking, spalling or settlement damage.
- Opening lintels show no visible signs of excessive deflection, displacement or corrosion.

MECHANICAL ASSESSMENT:

Mechanical Systems:

- There are six multi zone rooftop units as manufactured by Nesbitt. These rooftop units provide conditioned air to classrooms and the admin area. This equipment was installed August of 2004 and has been in operation for 10 years. The rooftop units utilize natural gas for heating and DX cooling. The nominal useful life of this type of equipment is 15 years. This equipment is approaching the end of its useful life and should be scheduled for replacement.
- The rooftop units as manufactured by AAON were manufactured in the early part of the 1990's (as best can be determined because most of the unit data plates are unreadable). The rooftop units utilize natural gas for heating and DX cooling. These rooftop units provide conditioned air to classrooms and the pool area. This equipment is approximately 22 years old and has exceeded its useful service life. The nominal useful life of this type of equipment is 15 years and should be scheduled for replacement.
- The Trane rooftop unit has a manufactured date code of October of 1996 and has been in service for 18 years. This equipment has a nominal useful life of 15 years. The equipment has exceeded its useful life and should be scheduled to be replaced.
- A Weil-McLain Series 80, Model: 780 boiler has been installed in the storage area off the Cafeteria. The boiler is fired with a natural gas burner with an input firing rate of 935 MBH, output is 753 MBH.
- A louver through the exterior wall and a duct drop to within 12 inches of the floor was installed to provide combustion air for the boiler. For the boiler to be compliant with the mechanical code a second source of outdoor air should be introduced within 12" of the ceiling.
- An emergency boiler shut off switch has been installed at the storage room exit.

- During conversations with the service company for the HVAC equipment; it was indicated that repairs to the rooftop equipment noted above are being made more frequently.

Classrooms (sections "B", "C" and "D"):

- Multi zone type rooftop units provide heating, ventilation and air conditioning for these areas.
- Based on the year noted on the drawings (2004) ventilation for these areas should be adequate. Actual air flow of the rooftop units should be confirmed by an air balancing contractor (due to the age and repairs made to the equipment over the life of this equipment).

Office and Kindergarten Classrooms located on the 1st floor:

- Hydronic reheat coils have been installed in the office and Kindergarten areas located on the first floor. These coils appear to have been installed during the 1996 HVAC upgrade (as indicated on the controls drawings). The pneumatic controls and reheat coils are 18 years old and are approaching the end of their useful life. Water coils have a nominal useful life of 20 years.
- The boiler for this area has been replaced, appears to have been manufactured in 2001, is approximately 13 years old, and is in good condition.

Large Group Instruction (3rd Floor):

- An AAON rooftop unit provides conditioned air to this area. Air is distributed via ceiling diffusers and the return air ducted back to the unit. This rooftop unit appears to have been installed in approximately 1992. This unit has been in service approximately 22 years, has exceeded its useful life, and should be scheduled to be replaced.

Modular Classroom areas:

- Modular classroom area: Two (2) modular classrooms have been installed at this site. Heating and cooling for these areas is being provided with a self-contained single zone air handler as manufactured by Bard Manufacturing Company. Each classroom has its own air handler and space mounted thermostat. The air handler is a wall mount package type unit. The equipment was operating at the time of the site visit; however proper ventilation of the areas could not be verified. The equipment was manufactured May of 1999 as noted in a power panel and is approximately 15 years old. This equipment is approaching the end of its service life of 15 years as indicated in ASHRAE Applications handbook. A listing of useful service life of equipment is included at the end of the mechanical study.

Cafeteria/Kitchen:

- Rooftop units provide conditioned air to the Cafeteria area. Air is distributed via high mounted sidewall registers.
- There is no cooking performed in this kitchen. Only food warming service is provided at this facility. A kitchen exhaust hood is not provided.
- Wall mounted transfer air grilles and general exhaust has been installed.

Multi-Purpose and stage area:

- A two split type air handling system provides conditioned air for these areas. Air is distributed via high mounted sidewall registers. Return air is ducted back to the air handlers and excess air is relieved through gravity relief hoods located on the roof above the stage area. The condensing units are located on the roof above the air handlers. The exact age of this equipment could not be determined but it appears to be 20 (+/-) years old. The nominal service life for this type of equipment is 20 years. These systems are at the end of their useful life and should be scheduled for replacement.

Music Room (typical for 2):

- Rooftop units as manufactured AAON provide the conditioned air to the music rooms. Each Music room was furnished with its own rooftop unit. Air is distributed via ceiling diffusers and the return air is ducted back to the unit. The rooftop units appear to have been installed in approximately 1992. These units have been in service approximately 22 years, have exceeded their useful life, and should be scheduled to be replaced.

Admin and Library:

- A multi zone rooftop unit utilizing natural gas for heating and DX cooling has been installed for these areas. Ventilation appears to be adequate. The rooftop unit was manufactured by Nesbitt, installed in 2004, and is approximately 10 years old. This unit is approaching the end of its useful service life.

Natatorium:

- A natural gas heating and DX cooling rooftop unit as manufactured by AAON provides conditioned air to the pool area. Ventilation for this area could not be determined. The rooftop unit was installed in 1992 and is approximately 22 years old. The rooftop unit has exceeded its useful service life and should be scheduled for replacement.

Toilet Rooms:

- Heat for these areas is provided with wall mounted electric convectors. Exhaust fans and grilles have been installed for the toilet rooms. The exhaust provided for the toilet areas appears to be adequate as indicated on the air balancing drawing dated 4-12-2014. The fans are approximately 22 years old, have exceeded their useful service life, and should be scheduled for replacement.

Corridors, Stairs and Vestibules:

- Ceiling and wall mounted cabinet heaters provide heat for these areas. The corridors are not directly ventilated. Ventilation of the corridors is required as indicated in the IMC.

Boys and Girls Locker Rooms:

- The quantity of exhaust does not appear to be adequate for these areas.

Emergency Generator:

- An emergency generator is located in the electrical room. An outdoor air intake for the generator's combustion and make-up air has been installed. Field verification by a

balancing contractor is required to verify if proper air flow for the generator is available. The ductwork for the radiator exhaust was installed.
- The exhaust fan operation should be interlocked with the generator operation. The fan should be de-energized when the generator is operating.

Ductwork, Diffusers, Grilles:
- These items are approximately 22 years old and are approaching the end of their useful service life. The average useful life for these items is 27-30 years.

Automatic Controls:
- A pneumatic control system was installed for this building. The air compressor and steel receiver are located in the Boiler Room. The pneumatic control system was installed in 1974- 75 and is approximately 40 years old. Pneumatic control systems have a service life of 20 years. This system has passed its useful life and should be scheduled for replacement.
- A DDC Facility Management System was installed at this location in 2002 to interface with the existing pneumatic system. DDC systems have a service life of 15-16 years. This system is 12 years old and is approaching the end of its useful service life. This system includes:
  - Carbon dioxide (CO2) control for the Gym and Cafeteria
  - Occupancy and Un-occupancy scheduling for the HVAC systems
  - Pool Cover monitoring

PLUMBING ASSESSMENT:

Domestic Water Service:
- A 4" domestic water service from Richmont Avenue enters the basement mechanical equipment room located below the pool area. The water meter and backflow preventer are located in that room.

Domestic Water Heaters:

- WH-1 – Located in the Maintenance Room next to the Cafeteria. The water heater manufacturer is Richmond Engineering Co. It is an electric hot water storage tank, 770 gallons, 56 k.w. The electric is turned off and the tank is used for storage. The domestic hot water is produced by two (2) 100,000 btu input gas fired boilers and piped to a small heat exchanger then piped to the storage tank. This is not a very efficient system.
- WH-2 – RUUD, 50 gallon electric water heater located in the same maintenance room. This serves the sink in the Food Prep Room next to the maintenance room.
- WH-3 – Located in the basement mechanical equipment room below the pool area. The water heater manufacturer is Richmond Engineering Co. It is an electric hot water storage tank, 2400 gallons, 108 kw. The electric remains on and is assisted by two (2) 100,000 BTUH input gas fired boilers and piped to a small heat exchanger then piped to the storage tank. The heat exchanger is leaking. This is not a very efficient system.

Pool Heaters:

- Both pool heaters were electric and have been replaced with the following:
  - Swimming Pool – Two (2) 100,000 btuh input gas fired boilers piped to a small heat exchanger. The piping to the heat exchanger is leaking.
  - Dive pool – A 100,000 btuh input gas fired boiler.

Natural Gas Service:

- There are two gas services for Kistler Elementary: The meter for the first gas service comes of Old River Road and is located outside the maintenance room. It serves the domestic hot water boilers located in that room and the mechanical roof top units. The meter for the second gas service comes off of Richmont Avenue, is located near the pool area, and serves the domestic hot water boilers, pool heaters and emergency generator.

Sanitary and Storm Sewers:

- The 8" sanitary sewer exits the front of the building and connects to a sanitary manhole located in Old River Road.
- The storm sewer from the roof drains exits the building at various locations, is collected with the area drains, and piped to Richmont Avenue.

Food Prep Room:

- The hot meals are produced by electric ovens. There is a triple bowl sink used for clean up purposes with a garbage disposal and a grease interceptor. There is a small hand sink located in the room.

Plumbing Fixtures:

- The plumbing fixtures for the most part appear to be original fixtures and trim. The fixtures should be replaced to meet allowable flow rates and consumption for plumbing fixture fitting sets by the International Plumbing Code. The fixtures should comply with the Americans with Disabilities Act.

Fire Protection:

- The fire protection system consists of a dry sprinkler system for the second floor library and a dry deluge system consisting of four (4) heads at the second floor entrance off the main stair tower. The system is served from a fire department connection on the Richmont Avenue side of the building.

ELECTRICAL ASSESSMENT:

Incoming Electrical Service:

- The existing electrical service is 277/480V, 3PH, 4W and rated for 4000 amps. The most recent maximum demand occurred between September 2013 to October 2013 was 639 KW which is approximately 770 amps. Based on PP&L's maximum demand readings the building is only using 19% of its designed capacity which will allow room for future growth.

The existing transformer is rated for 1XXX KVA and XXXX amps and with the maximum demand of XXX amps the existing transformer is only being used at XX% of its capacity.

Existing Power Distribution:

- The Existing 277/480V, 3PH, 4W, 4000 Amp rated Main Distribution Panel (MDP) is approximately 39 years old and should be replaced due to age and availability of spare parts. The existing subpanels are 120/208V, 3PH, 4W and 277/480V, 3PH, 4W are also 39 years old and should be replaced due to the availability of spare space and parts. Most of the existing electrical distribution panels are Federal Pacific and have a history of mechanical issues.

Emergency Lighting and Exit Signs:

- The existing emergency lighting system is fed by a 30 KW natural gas emergency generator. The exit signs appear to be adequate but some are not working properly and are damaged. These exit signs should be replaced.

Emergency Generators:

- The existing 30 KW natural gas fired emergency generator serves emergency lighting, phone and sound system. The generator is original to the building and is approximately 39 years old. The generator appears to be in good working order.

Fire Alarm System:

- The existing fire alarm system appears to have been replaced within the past 10 years. The horns should be replaced with horn/strobes for ADA compliance. Fire Alarm strobes should be added in toilet rooms.

Lighting General Areas:

- Lighting in corridors, offices, mechanical and storage areas were upgraded approximately eight years ago with electronic ballasts and energy saving T8 – 32 watt fluorescent lamps. The lighting in these areas appears to be adequate. Yellowing lenses should be replaced to improve fixture efficiency. Occupancy sensors should be installed in storage and toilet rooms.

Typical Classroom:

- Lighting in classrooms was upgraded approximately eight years ago with electronic ballasts and energy saving T8 – 32 watt fluorescent lamps. Lighting levels in classrooms appear to be adequate. Any yellowing lenses should be replaced to improve fixture efficiency.
- The classroom lighting fixtures are currently controlled by a wall switch and ceiling mounted occupancy sensor for added energy savings.
- Most classrooms don't appear to have an adequate quantity of general purpose receptacles. Additional receptacles should be added if local power panels can accommodate the added circuits.

Master Clock System:

- Master clock system is old. It appears to be working properly.

Telephone and Intercom Systems:

- Telephone system has been recently replaced with a voice over internet protocol (VoIP) system.

Data System:

- Classroom data jacks appear to meet the district's needs.

Security System:

- The building has a key fob access system.

SITE ASSESSMENT:

Kistler Elementary School is located at 301 Old River Road in the South Wilkes-Barre section of the city. The school is located at the intersection of Old River Road and Richmond Avenue occupying an area equivalent to several city blocks. In addition to the school building the complex includes large parking lots, asphalt play areas, tot lots, patios and large lawn areas. A community swimming pool is part of the complex that in the summer operates independently from the school with a separate entrance and lawn for sun bathing. The site is generally flat and easily accessed on foot from the surrounding residential neighborhoods.

Concrete Walks:

- Sidewalks along the city streets in the immediate area of the school are in good to fair condition with some heaving caused by tree roots. Handicapped curb ramps do not meet current design standards. On-site walks are generally in fair to poor condition with damage from settlement and deicing materials.
- Concrete curbing is in fair to poor condition with broken and damaged sections.
- Replace cracked and settled concrete walks and curbing throughout site.

Walls and Stairs:

- None.

Asphalt Pavement/Parking:

- Asphalt roadways, parking lots and play areas are generally in poor condition with alligator cracking, longitudinal cracks and pot holes. Areas of pavement have settled and dropped along curb faces.
- The number of available parking spaces is inadequate.
- Reconstruct pavement subgrades throughout the site.
- Remove and replace asphalt drives and parking areas throughout site.

Storm Drainage:

- Pavement settled around storm drains.

- Clean out on-site storm drains.

Handicapped Accessibility:

- Accessible entrances do not meet current standards. Accessible curb ramps do not meet current standards.
- Accessible parking spaces do not meet current standards.
- Reconstruct handicapped curb ramps to meet current standards.
- Redesign accessible parking spaces to meet current ADA design standards

Site Furnishings and Landscaping:

- Finishes on benches are worn.
- Refinish wood benches and trash receptacles.
- Fences are damaged and knocked off line.
- Repair chain link fencing.
- Repair washed out lawn areas.
- Topsoil is worn away exposing sidewalk edges and rutted and compacted from automobiles parking on the lawn.
- Re-grade and reseed lawn areas. Fill in along sidewalk edges and restore lawn.
- Refurbish planting beds throughout site. Prune trees and shrubs.
- Extend safety surface out farther from around play equipment.

ASBESTOS SUMMARY

Borton-Lawson conducted a limited environmental review on the Kistler Elementary School located at 301 Old River Road, in Wilkes-Barre, Luzerne County, PA. The school was built in 1975 in a mainly residential neighborhood and is approximately 150,750 ± square feet. Based on a review of available AHERA information, no documentation of potential asbestos-containing materials was identified for this building. Based on the age of construction of the building, it is anticipated that asbestos-containing materials, lead-based painted surfaces, PCB-containing light ballasts, mercury-containing fluorescent light bulbs and other potential hazardous substances are present. BL recommends a hazardous materials building survey, including the confirmation of the types and quantities of hazardous materials, be conducted prior to any future renovation or demolition activities.

HEIGHTS MURRAY ELEMENTARY SCHOOL
WILKES-BARRE, PA

GENERAL DESCRIPTION

Original Construction -	1976
Renovations -	N/A
IBC Construction -	Construction Type IIB
Site Acreage -	7.53 acres
Gross Building Area -	109,662 +/- SF
Current Enrollment -	757
Current Grades -	K - 6
Number of Classrooms -	63 regular
	11 special education

OVERVIEW

The Martin L. Murray Elementary School (also referred to as the Heights Elementary School) is a three-story, steel-frame, brick-veneer structure with floor plans designed according to a 'pod' concept that clusters six classroom towers around a centralized library, restroom cores, and vertical circulation in the form of two main staircases. The design approach is similar to that at Kistler Elementary, and they have the same materials and a similar architectural appearance.

Two large and visually distinct building elements flank the central group of classroom pods on opposite ends of the classroom cluster: the first is an auxiliary or secondary cluster of pods that contains the administrative offices and some classroom spaces; the second is the gymnasium/cafeteria/multi-purpose room with locker rooms and kitchen.

The arrangement of spaces at Murray Elementary is based on a hexagonal geometry that derives from the original idea of expandable/flexible classrooms where the demising walls are now permanent. Classroom shapes are five-sided, with 20 lacking any windows. The site is fully utilized with parking at a premium.

Historical Status

- Heights Murray Elementary School is of no importance historically at this time. The school is not on the National Register of Historic Places. It is not yet 50 years old.

Statement of Functional Obsolescence

The Heights Murray Elementary School is functionally basically utilized in much the same way as was intended when it was designed. Special education and Title 1 are examples of new curricular needs that did not exist in the same way when the school was built, and so smaller special education classrooms are not available to an optimal extent, nor

are they located in a preferred way. Modular classrooms to the side of the building were placed to increase capacity and curricular flexibility. However, spaces originally designed for family and consumer science and technology education programming are under-utilized. Generally, upgrades to education technology are required throughout.

Compared to other schools in the Wilkes-Barre Area School District, Murray Elementary is one of the newer buildings. The physical plant has been able to adapt to evolving needs without signs of significant functional obsolescence at this time. It should be noted that the particular planning approach with trapezoid-shaped classrooms can be inefficient and leaves many classrooms lacking wall hanging and marker board space.

Educational program issues include the number of windowless classrooms and the need to upgrade the education technology in the building.

Code Compliance

Code compliance at Heights Murray is similar to Kistler and mostly concerned with the following areas:

- Replacement of door hardware and ADA-compliant signage.
- Upgrading of the stair railings and guardrails to meet current code.
- Upgrade mechanical systems for fresh-air ventilation and energy performance code requirements.
- Upgrade the fire-alarm system.
- Upgrade the toilet rooms for ADA compliance.

ARCHITECTURAL ASSESSMENT:

Exterior Envelope:

Roof System:

- The roof at Murray Elementary has been inspected by the WBASD independent roofing consultant, Mark J. Sobeck Roof Consulting. The roof is conditionally rated almost entirely in the 'C' to 'F' category and requires replacement.

Windows:

- The windows are mostly original aluminum and are non-operating. Caulking is an ongoing maintenance item, and thermal performance is sub-standard compared to modern windows. The fact that the windows do not operate contributes to their stability. Thermal breaks are likely brittle. At this time most windows are 38 years old. The windows are recommended to be placed on a maintenance program for replacement.

Exterior Masonry:

- The exterior brick masonry is in good condition; see the structural assessment below. There is some cracking of the concrete block in the stair towers but it is not considered to be active. An annual masonry restoration program has been recommended, and expansion joints may require resealing.

Interior Finishes:

Walls and Plaster:

- The finishes show signs of the building's heavy use. Some areas of the exterior walls show signs of failing insulation and/or vapor barrier and require replacement.

Ceilings:

- Some suspended ceilings should be removed and/or repaired due to miscellaneous leaking.

Flooring:

- Carpeting should be replaced throughout the entire building.

Doors and Hardware:

- All doors are typically commercial grade wood veneer doors with narrow-lite windows, the large majority of which are original to the building. Operation of the doors is generally acceptable. At this time it is recommended to replace all doors, door frames, and hardware, when possible.

Paint:

- Walls generally are addressed through maintenance; some are in need of paint.

STRUCTURAL ASSESSMENT

General

- Building is a two-story, steel framed, partially subterranean structure.
- Roof framing consists of concrete-filled metal deck spanning over open-web steel joists spanning between structural steel girders supported by structural steel columns.
- Floor framing consists of concrete-filled metal deck spanning over open web steel joists spanning between structural steel girders supported by structural steel columns.
- Ground level floors are reinforced concrete slabs on grade.
- Exterior walls are brick veneer backed by non-load bearing stud framing.

Interior

- Visible wall, ceiling and floor surface conditions are good.
- Visible structural elements show minimal signs of corrosion, damage, cracking, settlement or deterioration.
- Water stains on ceiling tiles in stair wells are indicative of minor water infiltration.

Exterior

- Visible brick veneer shows no excessive cracking, spalling or settlement damage.
- Opening lintels show no visible signs of excessive deflection, displacement or corrosion.
- Veneer vertical control joints need to be recaulked. Joints are open and allowing water infiltration.
- Vertical flashing of window frames to brick veneer need to be recaulked at the glass stair wells. Joints are open and allowing water infiltration.
- Several ground level concrete sills have cracked and spalled at the vertical joint between the edge of concrete to brick veneer.
- Exterior, fenced patio outside of Kindergarten classrooms has damaged slab edges. The concrete slab extends over the face of the exterior wall and then is turned down to form a drip edge. This formed edge is only approximately 2" thick and portions of it have spalled off. The remaining portions exhibit cracking and the potential for pieces of concrete breaking loose and falling to the ground below, striking a student, is possible. The concrete drip edge should be sawcut and removed.

MECHANICAL ASSESSMENT:

Mechanical Systems:

- There are five (5) multi zone rooftop units as manufactured by Seasons-4. These rooftop units provide conditioned air to Classrooms, Art, Kindergarten, Music and the Admin areas. This equipment was installed August of 2002 and has been in operation for 12 years. The rooftop units utilize natural gas for heating and DX cooling. The nominal useful life of this type of equipment is 15 years. This equipment is approaching the end of its useful life, and should be scheduled for replacement.
- There are four (4) rooftop units as manufactured by Trane. The units were manufactured in 2001 and 2002, as indicated on some of the unit data plates, others are unreadable. The rooftop units utilize natural gas for heating and DX cooling. These rooftop units provide conditioned air to the Kitchen/ Café, Library, Large Group Instruction, and areas on the 1st floor. The equipment has been in service for approximately 12 years, and is approaching the end of its useful service life. The nominal useful life of this type of equipment is 15 years and should be scheduled for replacement.

During conversations with the service company for the HVAC equipment; it was indicated that the Season-4, multi-zone units are in good condition; and repairs to the other rooftop equipment noted above are being made more frequently.

Classrooms, Library:

- Multi zone type rooftop units provide heating, ventilation and air condition for these areas.
- Based on the year of installation, ventilation for these areas should be adequate. The contract drawing for this building which would indicate design air flows could not be located. In order to verify the equipment performance, actual air flow of the rooftop units should be confirmed by an air balancing contractor (due to the repairs made and age of this equipment).

Kindergarten, Arts and Music Rooms:

- As indicated on the control documentation, a multi-zone type rooftop unit provides conditioned air for these areas. The rooftop unit was manufactured in July of 2002, is approximately 12 years old, and is approaching the end of its useful life.
- Motor operated dampers installed in the unit and interlocked with temperature sensors in the rooms help to maintain the space temperature. This type of control is typical for all the multi-zone units installed at this site.
- Based on the year of installation, ventilation for these areas should be adequate. The contract drawing for this building which would indicate design air flows could not be located. In order to verify the equipment performance, actual air flow of the rooftop units should be confirmed by an air balancing contractor (due to the age and repairs made over the life of the equipment).

Large Group Instruction:

- A Trane rooftop unit provides conditioned air to this area. Air is distributed via ceiling diffusers and the return air is ducted back to the unit. This rooftop unit was manufactured in July of 2001. This unit has been in service approximately 13 years and is approaching the end of its useful life.
- Based on the year of installation, ventilation for these areas should be adequate. The contract drawing for this building which would indicate design air flows could not be located. In order to verify the equipment performance, actual air flow of the rooftop units should be confirmed by an air balancing contractor (due to the age and repairs made to the equipment over the life of this equipment).

Modular Classroom areas:

- Modular classroom area: Two (2) modular classrooms have been installed at this site. Heating and cooling for these areas is being provided with a self-contained single zone air handler as manufactured by Bard Manufacturing Company. Each classroom has its own air handler and space mounted thermostat. The air handler is a wall mount package type unit. The equipment was operating at the time of the site visit; however, the proper ventilation of the areas could not be verified. The equipment was manufactured July of 2002 as noted in a power panel, is approximately 12 years old, and is approaching the end of its service life. This equipment has a useful life of 15 years as indicated in ASHRAE Applications handbook. A listing of useful service life of equipment is included at the end of the mechanical study.

Cafeteria/ Kitchen area:

- A Trane rooftop unit provides conditioned air to these areas. The rooftop unit was manufactured in June of 2002, is approximately 12 years old, and is approaching the end of its useful service life. The air is distributed via ductwork and ceiling mounted diffusers and then ducted back to the rooftop unit.
- This system appears also to provide make-up air to the kitchen hood.

Kitchen:

- The conditioned air is ducted to and from the room, and distributed through the room with ceiling diffusers. This unit also provides the make-up air for the kitchen exhaust.
- A commercial kitchen exhaust system including a kitchen hood, an integral exhaust fan with make-up air section, and fire suppression system has been installed at this location. The kitchen hood is ducted to a roof mounted exhaust make-up air unit. In conversations with the service company it was indicated that the make-up section of this equipment is not operational.
- A fire suppression system was installed with nozzles along the length of the hood.
- The kitchen hood does not extend beyond the cooking equipment located underneath the hood. This installation does not meet the requirements of the (IMC) International Mechanical Code. It may be possible to re-arrange the equipment under the hood to comply with requirements of the IMC.
- The age of the kitchen hood exhaust fan could not be determined and appears to be the original exhaust fan installed in around 1976. The fan is approximately 38 years old. The fan has exceeded its useful service life and should be scheduled for replacement.
- A make-up air unit for the kitchen hood exhaust is not operational. As currently operating, the kitchen hood exhaust system is using conditioned air from the Kitchen, Cafeteria and adjacent areas as make-up for the hood exhaust. This is not an energy efficient use of these systems. A make-up air unit and supply plenum should be provided for the kitchen hood.
- Compressors for the Kitchen freezer and refrigeration equipment are located in a closet area in the Kitchen. The compressors furnished with the refrigeration equipment are water cooled. Domestic water is used to cool the compressors and then the water is dumped down the sanitary system. The compressors have a useful service life of 20 years and this equipment should be scheduled for replacement. Since the cafeteria is located directly below the roof, air cooled condensers in lieu of the current water cooled system; should be considered as a replacement for this type of equipment.

Multi-Purpose/ Gymnasium:

- A rooftop unit as manufactured by Trane provides conditioned air to this area. Air is distributed via ceiling diffusers. The air is ducted back to the rooftop unit and excess air is relieved through gravity relief at the rooftop unit. The rooftop unit was manufactured in June of 2002, is approximately 12 years old, and is approaching the end of its useful life. The nominal service life for this type of equipment is 15 years.
- Based on the year of installation, ventilation for these areas should be adequate. The contract drawing for this building which would indicate design air flows could not be located. In order to verify the equipment performance, actual air flow of the rooftop

units should be confirmed by an air balancing contractor (due to the age and repairs made to the equipment over the life of this equipment).

Admin:

- A rooftop unit as manufactured by Trane provides conditioned air for this area. The rooftop unit utilizes natural gas for heating and DX cooling. The exact age of this rooftop unit could not be determined but it appears to be manufactured in the time frame of early 2001-2002. It is approximately 12 years old, and approaching the end of its useful service life.
- Based on the year of installation, ventilation for these areas should be adequate. The contract drawing for this building which would indicate design air flows could not be located. In order to verify the equipment performance, actual air flow of the rooftop units should be confirmed by an air balancing contractor (due to the age and repairs made to the equipment over the life of this equipment).

Toilet Rooms:

- Heating for these areas is provided with wall mounted electric convectors. Exhaust fans and grilles have been installed in the toilet rooms. The quantity of air being exhausted from the toilet areas appears to be inadequate. The performance of the exhaust fans and actual air should be confirmed by an air balancing contractor. The fans are approximately 38 years old, have exceeded their useful service life, and should be scheduled for replacement.

Corridors, Stairs and Vestibules:

- Electric cabinet electric heaters provide the primary heat for these areas.
- Some of the main corridors are directly ventilated.

Boys and Girls Locker Rooms:

- The quantity of exhaust appears not to be adequate for these areas. The performance of the exhaust fans and actual air flow should be confirmed by an air balancing contractor.

Emergency Generator:

- An emergency generator is located in the electrical room. An outdoor air intake for the generator's combustion and make-up air has been installed and appears to be adequate. Field verification by a balancing contractor should be performed to verify that proper air flow for the generator operation is being provided.
- The radiator exhaust ductwork has also been installed.

Ductwork, Diffusers, Grilles:

- These items are approximately 38 years old and have exceeded their useful service life. The average useful life for these items is 27-30 years.

Automatic Controls:

- A pneumatic control system was installed for this building. The air compressor and steel receiver are located in the Boiler Room. The pneumatic control system was installed in 1975- 76 and is approximately 40 years old. Pneumatic control systems have a service life of 20 years. This system has passed its useful life and should be scheduled for replacement.
- A DDC Facility Management System (FMS) was installed at this location in 2002 to interface with the existing pneumatic system. DDC systems have a service life of 15-16 years. This system is 12 years old and is approaching the end of its useful service life. This system includes:
  - Carbon dioxide (CO2) control for the Rooftop and Multi-Zone Units
  - Occupancy and Un-occupancy scheduling for the HVAC systems
  - Control of the Multi-Zone Unit classroom zone dampers
  - FMS supports alarm reporting via e-mail or paging over the intranet or internet

Non-Operating Condensing Units:

- Maintenance personal indicated that there are three (3) non-operational condensing units located on the roof. The refrigerant should be removed and power disconnected for both the roof mounted and the related indoor air handlers. The roof mounted equipment and services through the roof should be removed when the roofing is scheduled to be replaced.

Other Roof Mounted Equipment:

- There is serviceable mechanical equipment located within 10 lineal feet of the edge of the roof. This is not in compliance with the mechanical code. A safety railing should be installed at these locations.

PLUMBING ASSESSMENT:

Domestic Water Service:

- The 3" domestic water service enters the building in the first floor outdoor storage room off of Amber Lane. The water meter, pressure reducing valve, and reduced pressure backflow preventer are located in that room. The piping system is copper tubing. The piping is insulated with the exception of the hot water, cold water, and recirculation hot water in the mechanical room serving the domestic water heaters.

Domestic Water Heaters:

- The domestic water heaters are located in the first floor mechanical room. There are two (2) gas fired water heaters. The gas has been disconnected and capped. Next to the two gas water heaters, two (2) electric water heaters have been installed. Both electric water heaters are manufactured by Ruud and are 54kw, 408/3 phase. The domestic cold water for the electric water heaters is piped through the disconnected water heaters. Piping on the electric water heaters is not equal. Because there is no tan expansion tank, the system may experience a problem with water hammer.

- There is a domestic water heater in the Janitors Room next to the kitchen. The water heater is electric manufactured by RUUD, 80 gallon, 4.5KW, 240V/1 phase. This serves the kitchen sink.

Natural Gas Service:

- The natural gas service enters the outside storage room. The meter is located on the exterior of the outside storage room. The natural gas service enters the outdoor storage room, serves the emergency generator, and is capped at the gas fired water heaters. At the gas meter a 2 ½" gas line rises up and through the building to serve the mechanical equipment on the roof.

Sanitary and Storm Sewers:

- The sanitary sewer exits the rear of the building toward Rose Lane.
- The storm sewer collects the roof drains and is piped through the interior of the building. The storm sewer exits the rear of the building toward Rose Lane.

Kitchen:

- The kitchen is a full service kitchen. The appliances are electric. The kitchen has a garbage disposal and a grease interceptor.

Plumbing Fixtures:

- The plumbing fixtures for the most part appear to be original fixtures and trim. The fixtures should be replaced to meet allowable flow rates and consumption for plumbing fixture sets by the International Plumbing Code. The fixtures should comply with the Americans with Disabilities Act.

Fire Protection:

- The fire protection system consists of a dry sprinkler system for the first floor library and a dry deluge system consisting of seven (7) heads at the second floor entrance off the main stair tower. The system is served from a fire department connection on the Rose Lane side of the building.
- The kitchen hood has a suppression system.

ELECTRICAL ASSESSMENT:

Incoming Electrical Service:

- The existing electrical service is 277/480V, 3PH, 4W and rated for 3000 amps. The most recent maximum demand occurred between January 2014 to February 2014 was 380 KW which is approximately 458 amps. Based on PP&L's maximum demand readings the building is only using 19% of its designed capacity which will allow room for future growth.

Existing Power Distribution:

- The Existing 277/480V, 3PH, 4W, 3000 Amp rated Main Distribution Panel (MDP) is approximately 39 years old and should be replaced due to age and availability of spare

parts. The existing subpanels are 120/208V, 3PH, 4W and 277/480V, 3PH, 4W are also 39 years old and should be considered for replacement due to the availability of spare space and parts.

Emergency Lighting and Exit Signs:

- The existing emergency lighting system is fed by a 40 KW natural gas emergency generator. The exit signs appear to be adequate but some do not work, these exit signs should be replaced.

Emergency Generators:

- The existing 40 KW natural gas fired emergency generator serves emergency lighting. The generator is original to the building and is approximately 39 years old. The generator appears to be in good working order.

Fire Alarm System:

- The existing fire alarm system appears to have been replaced within the past 10 years. The horns should be replaced with horn/strobes for ADA compliance. Fire Alarm strobes should be added in toilet rooms.

Lighting General Areas:

- Lighting in corridors, offices, mechanical and storage areas were upgraded approximately eight years ago with electronic ballasts and energy saving T8 – 32 watt fluorescent lamps. The lighting in these areas appears to be adequate. Yellowing lenses should be replaced to improve fixture efficiency. Occupancy sensors should be installed in storage and toilet rooms.

Typical Classroom:

- Lighting in classrooms was upgraded approximately eight years ago with electronic ballasts and energy saving T8 – 32 watt fluorescent lamps. Lighting levels in classrooms appear to be adequate. Any yellowing lenses should be replaced to improve fixture efficiency.
- The classroom lighting fixtures are currently controlled by a wall switch and ceiling mounted occupancy sensor for added energy savings.
- Currently most classrooms don't appear to have an adequate quantity of general purpose receptacles. Additional receptacles should be added if local power panels can accommodate the added circuits.
- Classrooms that have standard receptacles next to sinks (within six feet) should have them replaced with a ground fault circuit interrupter type receptacle.

Master Clock System:

- Master clock system is old. It appears to be working properly.

Telephone and Intercom Systems:

- Telephone system has been recently replaced with a voice over internet protocol (VoIP) system.

Data System:

- Classroom data jacks appear to meet the district's needs.

Security System:

- The building has a key fob access system.

SITE ASSESSMENT:

The Heights/Murray Elementary School is located at 1 South Sherman Street in the Heights section of the city. The school complex occupies several city blocks from North Sherman Street to North Hancock Street (east-west) and from Amber Lane to Rose Lane (north-south). In addition to the school building the site includes large parking lots, asphalt play areas, tot lots, patios and large lawn areas. The site is moderately sloping with level terraces created using retaining walls. The school is surrounded by residential neighborhoods accessing the school via city sidewalks.

Concrete Walks:

- Sidewalks along the city streets in the immediate area of the school are in good to fair condition with some heaving caused by tree roots. Handicapped curb ramps do not meet current design standards. On-site walks are generally in fair to poor condition with damage from settlement and deicing materials.
- Concrete curbing is in fair to poor condition with broken and damaged sections.
- Replace cracked and settled concrete walks and curbing.
- Reconstruct handicapped curb ramps to meet current standards.

Walls and Stairs:

- The concrete stairs are in fair condition but lack handrails.
- Brick facing and copings on retaining walls are deteriorating. Repair brick walls throughout site.
- Repair lighting on stairs and install handrails meeting current safety codes.

Asphalt Pavement/Parking:

- Asphalt roadways, parking lots and play areas are generally in poor condition with alligator cracking, longitudinal cracks and pot holing.
- Remove and replace asphalt drives and parking areas throughout site.

Storm Drainage:

- On-site storm drainage is either collected in swales and directed to storm drains or flows off site to the city storm drainage system.
- Install storm drainage to intercept storm flows and eliminate erosion.
- Clean out on-site storm drains.

Handicapped Accessibility:

- Accessible entrances do not meet current standards. Accessible curb ramps do not meet current standards.
- Accessible parking spaces do not meet current standards.
- Redesign accessible parking spaces to meet current ADA design standards

Site Furnishings and Landscaping:

- Concrete tables and chairs should be cleaned and painted.
- Replace concrete benches and tables.
- Fences are damaged and knocked off line.
- All landscape beds and lawns need refurbishing.
- Repair washed out lawn areas.
- Replenish mulch around tot equipment.
- Topsoil is worn away exposing sidewalk edges. Re-grade and reseed lawn areas. Fill in along sidewalk edges and restore lawn.
- Refurbish planting beds throughout site. Prune trees and shrubs.
- Replenish wood fiber mulch around play equipment.

ASBESTOS SUMMARY

Borton-Lawson conducted a limited environmental review on the Heights Murray Elementary School located at 1 South Sherman Street, in Wilkes-Barre, Luzerne County, PA. The school was built in 1976 in a mainly residential neighborhood and is approximately 109,662 ± square feet. Based on a review of available AHERA information, asbestos-containing materials are known to be present in the building. Based on the age of construction of the building, it is anticipated that lead-based painted surfaces, PCB-containing light ballasts, mercury-containing fluorescent light bulbs and other potential hazardous substances are also present. BL recommends a hazardous materials building survey, including the confirmation of the types and quantities of hazardous materials, be conducted prior to any future renovation or demolition activities.

EDWARD MACKIN ELEMENTARY SCHOOL

WILKES-BARRE, PA

GENERAL DESCRIPTION

Original Construction -	1937
Renovations -	N/A
IBC Construction -	Construction Type IIB
Site Acreage -	1.108 acres
Gross Building Area -	52,450 +/- SF
Current Enrollment -	N/A
Current Grades -	N/A
Number of Classrooms -	N/A

OVERVIEW

Mackin Elementary has been in disuse as a school for the past 11 years. The Wilkes-Barre Area School District has authorized a study to evaluate the re-opening of the school, concurrently with the District Wide Feasibility Study. The purpose of re-opening the Mackin School would be to provide for relocation space for students at Coughlin High School were Coughlin to become infeasible as a secondary center due to age of the facility.

Mackin Elementary is a 77-year old school building located in the East End neighborhood of Wilkes-Barre. As such, it is in Coughlin High School's geographical area at the north end of the city.

ARCHITECTURAL ASSESSMENT:

Exterior Envelope:

The building is a 3-story brick building of approximately 52,450 SF.

Exterior Construction:

- The exterior envelop includes heavy masonry walls with face brick and a red stone foundation, metal and wooden windows, and aluminum and steel entry doors.
- All windows are serviceable.
- Masonry brick and foundation stone should be pressure washed, repaired, and re-pointed.
- Parapet walls should be repaired and re-pointed where necessary.
- Entry stairways, landings and railings require some repair.
- Entry doorways and hardware should be replaced.
- Entry canopies, stairs, and ramps that comply with ADA access should be constructed.
- The stone retaining walls onsite should be demolished and replaced.

Interior:

- The building's interior includes heavy masonry walls with wood studs and plaster along with drywall walls, wooden and metal interior doors, plaster ceilings, carpeting and vinyl tile flooring.
- Restrooms should be modified to comply with ADA requirements.
- Ceilings and walls have water damage and are in need of repair.
- A comprehensive building specific evaluation and conditional assessment is underway.

STRUCTURAL ASSESSMENT

General

- The building is a three-story, concrete and steel-frame structure with a partially subterranean basement.
- Roof framing consists of precast concrete roof deck spanning across structural steel beams, girders and columns.
- Floor systems consist of a one-way, reinforced concrete slabs spanning across a combination of reinforced concrete beams and structural steel beams, girders and columns.
- Basement and sub-basement level floors are concrete slabs on grade. Crawlspace areas have dirt floors.
- Basement foundation walls are reinforced concrete.
- Exterior walls are brick veneer with non-load-bearing framing backup .

Interior

- Visible wall, ceiling and floor surface conditions are poor to fair.
- Visible structural elements show minimal signs of corrosion, damage, cracking, settlement or deterioration.
- Concrete roof deck is cracked and spalled in a few locations. Damage appears to have minimal impact on the structural integrity of the system but should be monitored for continuing degradation.
- The concrete floor deck and framing at the interior ceiling of the basement overhead door has cracked, spalled and corroded due to water infiltration and should be cleaned, repaired and patched in the near future.
- Localized cracks in wall finishes throughout the floor levels are indicative of minor, non-structural movement.
- Corner cracks in the plaster finishes of the classrooms are indicative of minor, non-structural movement.
- Water staining of interior plaster wall finishes and ceiling are indicative of localized water infiltration. Some areas show bubbling, splitting and sagging. Water infiltration can impact the structural elements within the finishes through rotting and corrosion. There are not visible signs of structural degradation, displacement or deflection at these areas but it is recommended that these locations continue to be monitored.

Exterior

- Visible brick exterior shows cracking, spalling and some settlement damage in several areas. Brick joints throughout have areas in need of repointing to repair mortar joint degradation.
- Opening lintels show no visible signs of excessive deflection or displacement.
- Stone steps and stair walls are, in general, poor condition. Stone steps need top be removed, repaired and reset to level and plumb condition. To reduce water infiltration, several steps require sealing of joints, stone knee walls and caps require repointing and sealing. Concrete knee walls are in poor condition; with spalling, cracking and corrosion requiring removal and replacement.
- Stone veneer on building exterior requires repointing in multiple locations to reduce water infiltration.
- The perimeter concrete retaining walls are in poor condition; with cracking, spalling and reinforcing bar corrosion. The extent of the damage varies from the need to clean, repair and patch to requiring complete removal and replacement.

MECHANICAL ASSESSMENT:

Heating System:

- The heating system consists of two 80 horse power, Burnham Gold Cube low pressure steam boilers. The boiler provides low-pressure steam to unit ventilators, radiators, baseboard and convectors. The boiler is fired by a natural gas burner manufactured by Siemon Power Flame-Model: B40 -25, with a minimum firing rate of 2500MBH and maximum firing rate of 4000 MBH. Both of the boilers have been red tagged by the utility company for safety reasons.
- A boiler feed unit is interlocked with the boiler operation.
- A single outdoor air louver provides combustion air for the boiler. The International Fuel Gas Code (IFGC) requires that two permanent openings for combustion air be provided for combustion air in the boiler room. One within 12" of the ceiling and the other with in 12" of the floor. This installation does not meet that requirement.
- Ceiling hung steam unit heaters provide heat for the boiler room.
- Emergency boiler shut-off switches have not been provided at the Boiler Room exits.
- One of the boilers is missing an access door for the tube area, and both boilers have been noted as leaking through the shells.
- The utility company has red tagged both boilers. The maintenance department should verify that the gas isolation valves at the boilers are in the off position.
- These boilers are not operational and are past there useful life. A new energy efficient type of heating system should be provided for the building if it is to be reopened.

Classrooms/ Office Areas:

- Basement: Floor mounted classroom unit ventilators with steam coil provides heating and ventilation for these classrooms.
- Upper Levels: Floor mounted classroom type unit ventilators with a steam heating coil provides heating for these classrooms. Additional heat is provided with steam baseboard installed along the exterior wall. The unit ventilators and operable windows during temperate weather provide ventilation for these areas.
- In classrooms and offices without classroom unit ventilators heat is provided with floor mounted cast iron radiators. This type of heating system does not have any provision for providing tempered outdoor air for ventilation. Ventilation is provided for these rooms via operable windows.
- Unit ventilators are antiquated, appear to be non- functional, and should be replaced with an energy efficient type of system.

Multipurpose Room (Cafeteria, and Auditorium):

- This room is heated with cast iron steam radiation.
- An air handler located on the third floor provides ventilation for the area.
- Operable windows also provide a means to ventilate this space
- It appears that no food preparation was performed at this location. Kitchen hood or general exhaust fans are not provided.

Corridors/ Stairwells/ Storage Areas:

- The corridors and stairwells are heated with steam convectors.
- No means for ventilation of the corridors or storage areas is provided as required by the mechanical code.

Admin Offices:

- The office areas are heated with cast iron steam radiators. Operable windows provide ventilation for these areas.
- Exhaust equipment is not present for the toilet room area.

Student Toilets Rooms:

- Inline exhausts fans located in the ceiling area of the third floor provide exhaust for both the boys and girls rooms. These fans were not operational at the time of the site visit.
- Exhaust appears to be inadequate in all areas.

Janitor's Closet:

- No means for ventilation or exhaust was provided for these areas as required by the mechanical code.

Emergency Generator:

- The generator is not interlocked with a motor operated louver/damper to provide outdoor air for combustion or make-up air for the radiator exhaust when the generator is operating.

- Exhaust ductwork from the generator radiator to exterior of building has not been installed. As installed, the heat from the generator is rejected to the building. As the space temperature increases, the ability to cool the generator will be hampered and at some point the generator will shut down.

Building Controls:

- A pneumatic control system was installed for this school. The control system appears to be original to the building and does not appear functional. This type of control system is obsolete and should be replaced.

PLUMBING ASSESSMENT:

Domestic Water Service:

- The 3" domestic water service enters the building off of Hillard Street. The domestic water piping is for the most part, copper tubing. There is a small portion of pex and steel piping. The piping is mostly insulated and in poor condition. The water meter has been removed and the system has been drained for some time.

Domestic Water Heaters:

- The majority of the domestic hot water was produced by a Patterson Kelley copper lined heat exchanger located on the ground floor boiler room.
- Also located in the boiler room is a "Ruud" 40 gallon gas fired atmospheric water heater. Piping has been disconnected.
- There is a 52 gallon electric water heater located in the Girls Shower area on the ground floor.

Natural Gas Service:

- The natural gas service enters the side of the building near the boiler room. It serves the existing steam boilers and the kitchen gas range.

Sanitary & Storm Sewers:

- The sanitary and storm sewers exit the building at Hillard Street. It cannot be determined without a video inspection whether the lines are separate or combined.

Kitchen:

- The Kitchen consists of a double bowl sink and a 4 burner gas range with oven and broiler.

Plumbing Fixtures:

- The plumbing fixtures are old and in poor condition. The majority of the flush valves have been removed from the water closets. The fixtures should be replaced to meet allowable flow rates and consumption for plumbing fixtures

and fixture fittings set by the International Plumbing Code. The fixtures should comply with the Americans with Disabilities Act.

Fire Protection:

- A stand pipe system with two (2) hose valves, racks, and hoses are on each floor of the building. The system appears to be original and beyond its life expectancy. The system is fed from a separate line from Hillard Street and is not metered.

ELECTRICAL ASSESSMENT:

Incoming Electrical Service:

- The existing electrical service is 120/208V, 3PH, 4W. Service is fed from three (3) 25 KVA pole mounted PPL transformers which equals 208 amps.
- Any substantial mechanical HVAC changes to the building will require the existing incoming electrical service to be upgraded.

Existing Power Distribution:

- The Existing 120/208V, 3PH, 4W, 1200 Amp rated Main Distribution Panel (MDP) is in good condition and appears to have been replaced within the past 15 years. New breakers for the GE Spectra series panel are readily available and can be added if required. The building's main service disconnect switch and utility company metering cabinet (CT) are located in a storage area next to basement crawl space.
- The existing subpanels are 120/208V, 3PH, 4W, 225 Amp main lugs and are in good condition and appear to have been replaced within the past 15 years. New breakers can be added to the existing GE A Series panels, are readily available, and can be added if required.
- The original panels from the late 1930's are being used as splice boxes that feed the newer GE subpanels. The splice boxes can be opened, exposing circuits that are energized. These splice boxes should be provided with a locking mechanism so that unauthorized personnel will not have access.

Emergency Lighting and Exit Signs:

- The existing emergency lighting system is provided by emergency battery power packs. The packs do not hold a charge and should be replaced.
- Additional battery packs should be added for proper emergency lighting illumination. The existing exit signs are very old and should be replaced with new self-contained exits with chevron "arrows" as required by code.

Fire Alarm System:

- The existing fire alarm system is very old and should be replaced. The fire alarm system should meet ADA standards for audio/visual requirements and pull stations should be installed (lowered) for handicapped accessibility.

Lighting General Areas:

- Lighting in corridors, offices, mechanical room and storage areas is inadequate and is not up to current lighting standards. Lenses are old and yellow which reduces the efficiency of the fixture while reducing light output. These fixtures should be replaced with current energy saving fluorescent technology and a footcandle evaluation should be performed so that proper light levels are achieved.

Typical Classroom:

- Lighting in classrooms is inadequate and antiquated and should be replaced with current energy saving fluorescent technology and a footcandle evaluation should be performed so that proper light levels are achieved.
- There is no existing lighting control in classrooms. Occupancy sensors and/or day lighting control utilizing photocells and dimmable fluorescent ballasts should be provided for added energy savings.
- General purpose receptacles in most classrooms appear to be adequate and have been modified in the past 15 years. Classrooms that have been modified also have orange "isolated" grounding receptacles that are used for computer equipment.

Master Clock System:

- Master clock system is not working and should be replaced.

Telephone and Intercom Systems:

- Telephone and intercom systems will need to be replaced.
- Classrooms are not equipped with phones and have an outdated push button style intercom system. Telephone and intercom should be replaced. Additional speakers should be added in areas such as auditorium, mechanical equipment rooms, corridors, etc.

Auditorium Stage Lighting and Sound System:

- The existing stage lighting is old and should be replaced using a new digital lighting system.

Data System:

- Data switch racks are located in several areas of the building. Several switches are still in place along with the data wiring. All servers have been removed. It would be advised to replace the existing switching and test existing wiring to verify it is still in good working order.

Security System:

- There are no CCTV cameras or key fob system.
- If the building is going to be used for future classes the WBASD should consider installing security CCTV cameras along with a key fob system. Also a door access for visitors/parents should be added.

SITE ASSESSMENT:

The Mackin School Building is located at the corner of Hillard Street and Pitt Lane in residential neighborhoods in the City's east end. The building is currently not utilized as a school but for miscellaneous storage. The school building extends completely through the block from Hillard Street to Chapel Street with entrances on both Hillard Street, a first floor entry, and Chapel Street, entering on the second floor. The building is constructed on a sloping site with level terraces created by a series of retaining walls. The areas surrounding the building are comprised of lawns, an asphalt play area and paved driveways for maintenance access to the basement and second floor. There is no on-site parking.

Concrete Walks

- All on-site walks and stairs are in poor condition.
- Replace cracked and settled concrete walks throughout site.

Walls and Stairs

- All of the site retaining walls are in poor condition. Walls are cracked, concrete is spalling and brick veneers are failing. Guard railings on the walls do not meet current safety codes.
- Demolish and reconstruct retaining walls and low landscape walls throughout site.
- Demolish and reconstruct stairs to comply with current safety codes.
- Replace handrails with new guard railing to comply with current safety codes.

Asphalt Pavement/Parking

- On-site pavement is worn out with severe cracking and base failures.
- No on-site parking exists.
- Remove and replace asphalt drives, walks and playground areas throughout site.

Storm Drainage

- On-site storm drains need cleaning and frames reset.
- Clean out on-site storm drains.

Handicapped Accessibility

- Accessible entrances do not meet current standards. Accessible curb ramps do not meet current standards.
- There are no accessible parking spaces.
- Reconstruct handicapped curb ramps to meet current standards.
- Provide accessible parking spaces and accessible route to building meeting current ADA design standards.

Site Furnishings and Outdoor Landscaping

- Sections of fencing at the parking lot are rusted, coming apart, and knocked off-line.

- Plants are overgrown and invading pavement and lawn areas.
- All landscape beds need refurbishing.
- Repair chain link fencing.
- Restore and reseed lawn areas. Fill in along sidewalk edges and restore lawn.
- Refurbish planting beds throughout site. Prune trees and shrubs.

ASBESTOS SUMMARY

Borton Lawson conducted a limited environmental review of the Mackin Elementary School located on Chapel Street, in Wilkes-Barre, Luzerne County, PA. The school was built in 1938 in a residential neighborhood and is approximately 52,450 ± square feet. Based on a review of available AHERA information, asbestos-containing materials are known to be present in the building. Based on the age of construction of the building, it is anticipated that lead-based painted surfaces, PCB-containing light ballasts, mercury-containing fluorescent light bulbs and other potentially hazardous substances are also present. BL recommends a hazardous materials building survey, including the confirmation of the types and quantities of hazardous materials, be conducted prior to any future renovation or demolition activities.

DISTRICT ADMINISTRATION BUILDING

WILKES-BARRE, PA

GENERAL DESCRIPTION

Original Construction -	c. 1900-1912
Renovations -	Unknown
IBC Construction -	Construction Type IIB
Site Acreage -	1.136 acres
Gross Building Area -	22,600 +/- SF
Current Enrollment -	N/A
Current Grades -	N/A
Number of Classrooms -	N/A

OVERVIEW

The Wilkes-Barre Area School District Administrative building is a three-story brick-bearing wall structure with an interior concrete encased steel frame. The framing members bear on beam pockets in the exterior walls.

Built at the beginning of the 20th century, the Admin Building, as it is known, is a stout office building with a rectangular plan that was built with a glass-enclosed elevator shaft surrounded by the building's main staircase. This main stair was the only stair inside the building, and so a second means of egress in the form of an enclosed stair tower has been added to the rear of the building in order to meet minimum-code requirements for two exit stairs.

The building's architectural character is impressive, other than the brick requiring cleaning. Worn and uneven exterior monumental front stairs to South Main Street require resetting. A neo-classically inspired design with a four-sided hip-roof, the Admin Building's brick walls are trimmed in a gold-colored glazed terra-cotta ornamentation at pilaster capitals, entablatures and cornices. All of the original masonry work is in good condition (See the structural report below).

Historical Status

- The Administration Building is not on the National Register of Historic Places.

Statement of Functional Obsolescence

- The Administration Building is viable in terms of its use as an office and administrative center for the School District. At roughly 5,500 SF per floor (including basement), the building is not inordinately inefficient in its space utilization, although modern open-plan systems-furniture arrangements are not optimal given the fixed corridor configuration.

Ceilings are high as was typical of the time, and the building does not present an efficient volume-to-plan ratio for efficient energy use.

- The building code characteristics of the building are almost quaintly out of alignment with modern code. The glass-and-iron enclosed elevator shaft-way offers no fire rating to the vertical shaft through the floors, and the wrap-around stair arrives at each floor level without benefit of separation from the interior corridors, thus offering no smoke barrier floor to floor.
- In terms of ADA compliance, devices and restrooms are completely non-compliant. In summation, due to the fact that no program of major interior improvements has ever been implemented in the building, most appurtenances, fittings, and amenities are original. The building does not resemble a modern building in any way.
- At this time, however practically adapted, building systems are not such that the building is optimized for energy efficiency. While the building's structural integrity and architectural value remain high, its building systems are antiquated and not configured to make the most out of a remarkably solid and historic shell.
- In conclusion, the functional performance of the Administration Building has been acceptable by virtue of careful and thoughtful space utilization.

Code Compliance

- At the Administration Building, the code compliance issues are not so egregious as to cause life safety concerns; however all conditions are effectively out of current compliance. A comprehensive set of code and ADA improvements would not be inexpensive and would require circumstantial custom adaptations throughout as the building itself will resist modern dimensional requirements.

ARCHITECTURAL ASSESSMENT:

Exterior Envelope:

Roof System:

- The roof at the Admin Building is heavy-duty replacement asphalt shingle on the original hip, with a small flat portion of the roof being EPDM membrane. The roof is in good condition.

Windows:

- Windows are aluminum replacement single-hung windows with insulating glass units and are generally in fair to good condition with acceptable operation. The windows have sub-standard insulating values compared to modern windows; as such, they under-perform in energy conservation performance as they lack a low-e coating. The caulking is failing throughout and the windows are recommended to be placed on a maintenance program for replacement.

Exterior Masonry:

- As stated above, The Admin Building's exterior brick masonry appears to be in very good condition, with some areas in need of repointing. It is recommended that the building be cleaned of a century of acidic atmospheric grime, and that glazed terra-cotta ornamentation be cleaned and sealed to preserve those elements from deterioration.

Interior Finishes:

Walls and Plaster:

- The Admin Building has non-structural cracking of plaster and areas of bubbling and/or degradation where localized water and/or moisture infiltration has entered the building. Generally, this area does not present large scope items.

Ceilings:

- Ceilings are mostly plaster and have issues similar to the walls. Where suspended ceilings have been installed they are aged in appearance. Typically, these tiles are discolored or deflected and in need of replacement. In a building with no central air, these ceiling systems have been prone to absorbing humidity.

Flooring:

- The public hallway on the first floor is terrazzo. Other rooms are carpeted. Carpeting in the offices is aged throughout. The public restrooms, with the exception of an ADA compliant unisex restroom at the basement level, have tiled floors which are original to the building. The condition of the tile is worn but stable.
- Upstairs offices are mostly carpeted throughout, with some being VCT. Conditionally, all would be recommended for replacement in any comprehensive renovation scenario.

Doors and Hardware:

- Many doors are typically the original thick heavy-duty wood with half-lite windows. Where new locksets have been installed, they have been installed individually.
- The door hardware is still of the knob type into many classrooms. Lever handles are not installed on all doors and to this extent the hardware does not comply with ADA (Americans with Disabilities Act).
- At this time, a door by door cataloguing throughout the building is required to fully document the code compliance and serviceability level of all doors and door hardware, however, the general condition is one of a multitude of configurations that could present a security management challenge.

Paint:

- Generally, all walls in the building are clean and acceptable, with some few areas in need of painting.

STRUCTURAL ASSESSMENT

General

- Building is a three-story, concrete-encased, steel-frame structure with a basement.
- Roof framing consists of reinforced concrete roof deck spanning across steel beams, girders and central core columns. Center portion of the mansard roof is wood framed.
- Floor systems consist of one-way, reinforced concrete slabs spanning across concrete-encased steel beams, girders and columns.
- Basement level floors are concrete slabs on grade.
- Basement foundation walls appear to be parged stone.
- Exterior walls are multi-wythe, load-bearing brick.

Interior

- Visible wall, ceiling and floor surface conditions are good.
- Visible structural elements show minimal signs of corrosion, damage, cracking, settlement or deterioration.
- Concrete roof deck is cracked and spalled in a few locations. Damage appears to have minimal impact on the structural integrity of the system but should be monitored for continuing degradation.
- Localized cracks in wall finishes throughout the floor levels are indicative of minor, non-structural movement.
- Corner cracks in the plaster finishes of the offices are indicative of minor, non-structural movement.
- Water staining of interior plaster wall finishes and ceiling are indicative of localized water infiltration. Some areas show bubbling, splitting and sagging. Water infiltration can impact the structural elements within the finishes through rotting and corrosion. There are not visible signs of structural degradation, displacement or deflection at these areas but it is recommended that these locations continue to be monitored.

Exterior

- Visible brick exterior shows minimal cracking, spalling or settlement damage. Brick joints throughout have areas in need of repointing to repair mortar joint degradation.
- Opening lintels show no visible signs of excessive deflection or displacement.
- Stone steps and stair walls are, in general, good condition. To reduce water infiltration, several steps require sealing of joints, stone knee walls and caps require repointing and sealing.
- Stone veneer on building exterior requires repointing in multiple locations to reduce water infiltration.
- The stone retaining wall that bounds the egress route out of the north face of the building is rotating into the egress walkway. Rotation at the top of the wall is approaching 6-

inches and is, potentially, unstable. The wall should be repaired, plumbed and anchored to the adjacent building foundation in the near future.
- The steel-framed fire escape at the rear of the building is corroding due to long-term exposure. In the near future, the framing should be stripped and cleaned to bare metal, primed and painted with an exterior-grade epoxy paint.
- The building decorative stone caps, trim and cornices need to have joints repointed and sealed to prevent water infiltration in the near future.

MECHANICAL ASSESSMENT:

Heating System:
- The heating system includes a natural draft, cast iron, boiler as manufactured by Weil-McLain, Model: LGB-13,Series: 2. The boiler is natural gas fired with a input firing rate of 1560 MBH, with an output of 1263.3 MBH. The boiler has a nominal combustion efficiency of 81%.
- The boiler was manufactured in 1987, is approximately 27 years old, and is approaching the end of its useful life. Cast iron boilers have a nominal useful life of between 30 to 35 years.
- An existing condensate receiver is located in the boiler room. The age of the condensate unit could not be determined during the during the site visit.
- An automatic chemical feed unit has been installed and connected to the boiler make-up water line to the condensate receiver.
- Emergency boiler off-switches have not been installed at the boiler room exit.
- Combustion air for the boilers is not adequate. A single louver has been installed in the exterior wall. The IFGC requires two permanent openings one within 12" of the ceiling and one within 12" of the floor. Both openings are to be sized for the total firing rate of equipment located in the room.
- A heating and ventilating unit manufactured by B.F. Sturtevant Company has been installed in the mechanical room. The unit is configured with a steam coil, outdoor air intake, and filter section. The supply air is ducted to all the rooms and the supply air registers are located in the window sills. The return air grilles are located near the floor line in the offices, and ducted back to the unit. The air handler appears to be the original unit installed when the building was constructed, approximately 75+ years ago and has exceeded its useful service life. This unit should be scheduled for replacement.
- A balancing report for the heating and ventilating unit manufactured by B.F. Sturtevant should be performed while this equipment is still operational. The manufacturer of the equipment is no longer in business and limited information is on hand for this unit. The report at a minimum should include, but not be limited to actual air flow, supply, return, relief and outdoor air cfm, total operating pressure, inlet static pressure, coil data (i.e. size, fin spacing, tubing, pressure drop - entering and leaving pressure) name plate data, electrical data: Voltage, Phase, Motor HP, RPM, drive type, etc. This information would be helpful for matching the performance of the existing equipment with a new unit, when a replacement for this equipment is necessary.

Cooling:

- Central cooling was not installed at this building.
- Window air conditioning units are utilized for cooling in the office areas.

Office Areas / Admin Assistant:

- Heating and ventilating for these rooms is provided by the central system located in the mechanical room on the basement level. The air is ducted to the room and distributed via registers located in the window sills and then returned through grilles and ductwork located in the exterior wall back to the air handler.
- Ventilation for these areas is provided through the air handler and operable windows.

Admin-Office Area:

- Heating and ventilating for this room is provided by the central system located in the mechanical room on the basement level. The air is ducted to the rooms and distributed via registers located in the window sill and then returned through grilles and ductwork located in the exterior wall back to the air handler.
- Ventilation for these areas is provided through the air handler and by operable windows.

Toilet Rooms:

- Heating and ventilating for these rooms are provided by the central heating and ventilating system located in the mechanical room on the basement level. The air is ducted to the room and distributed via registers located in the window sill.
- A ceiling cabinet fan has been installed in each toilet room. The exhaust system appears not to be adequate for the toilet rooms.

Janitor Closets:

- Exhaust is not provided for the Janitor Closets. Exhaust for the janitor closets is required by the IMC (international Mechanical Code)

Emergency Generator:

- None installed at this facility

Record/ Vault:

- Direct ventilation or exhaust was not installed in this area.

Corridors/ stairwells:

- There is no mechanical ventilation in the corridor areas. Ventilation for the corridor areas is a requirement of the mechanical code.

Automatic Controls:

- A single thermostat for the heating and ventilating system is located in the first floor corridor. This type of installation makes it difficult to control the heating in the individual offices areas because a single control point of temperature sensing tends to overheat the upper floors.

PLUMBING ASSESSMENT:

Domestic Water Service:

- The 1" domestic water service enters the building in the basement Storage Room off of South Main Street. The water meter and reduced pressure back flow preventer are located in that room. The water service is copper tubing and appears to be in good condition. After the meter and reduced pressure backflow preventer, the 1" copper line connects to a 1 ¼" brass pipe which is probably original to the building. The domestic water piping is not insulated.

Domestic Water Heaters:

- The domestic water heaters are located in the basement Mechanical Room. There are two (2) electric water heaters, both are manufactured by Ruud, 4500 watts, 208/240V. One water heater provides 80 gallons of storage. The other provides 40 gallons of storage. They are piped together and there is no hot water recirculation.

Natural Gas Service:

- The natural gas service enters the rear of the building in the Boiler Room to serve the gas fired boiler. The gas meter is located outside the boiler room.

Sanitary and Storm Sewers:

- The sanitary sewer exits the front of the building and connects to the sewer system in South Main Street. The piping is cast iron and appears to be in good condition.
- The storm sewer is collected by roof drains and piped in through the interior of the building before exiting to South Main Street.

Plumbing Fixtures:

- The plumbing fixtures and trim appear to be the original fixtures. The fixtures should be replaced to meet allowable flow rates and consumption for plumbing fixtures and fixture fittings set by the International Plumbing Code. The fixtures should comply with the Americans with Disabilities Act.

Fire Protection:

- There is no fire protection.

ELECTRICAL ASSESSMENT:

Incoming Electrical Service:

- The existing electrical service is 120/208V, 3PH, 4W, 400 amps. The most recent maximum demand (June 2014 to July 2014) was 60 KW which is approximately 166 amps. Based on PP&L's maximum demand readings the building is only using 41.5% of its designed capacity.

Existing Power Distribution:

- The Existing 120/208V, 3PH, 4W, 400 Amp rated Main Distribution Panel (MDP) is in fair condition. The panel should be replaced. Additional loads cannot be added due to lack of space.
- The existing subpanels are 120/208V, 3PH, 4W, and are antiquated. The old Trumbull panels should be replaced immediately because the panel buss bars are exposed when the door is open allowing for potential electrocution.
- The building also experiences circuit overloading with nuisance breaker tripping. New circuits should be run to existing equipment to lighten existing circuit loads.

Emergency Lighting and Exit Signs:

- The existing emergency lighting system is provided by emergency battery power packs. Battery packs appear to be in good working order. Exit signs are a combination of self-contained battery and cardboard. Cardboard signs should be replaced with self-contained battery units.

Fire Alarm System:

- There is no fire alarm system in the building.

Lighting General Areas:

- Lighting in corridors, offices, mechanical and storage areas is not up to current lighting standards. Lenses are old and yellow which reduces the efficiency of the fixture while reducing light output. These fixtures should be replaced with energy saving fluorescent technology and photocells should be added for additional energy savings.

Telephone System:

- Telephone system was recently replaced with a voice over internet protocol (VoIP) system.

Data System:

- The data system appears to meet the districts' needs.

Security System:

- The building has a card access system.

SITE ASSESSMENT:

The Administration Building is located at 730 South Main Street in a former school building. The building is on a terrace constructed into the side of a hill overlooking South Main Street. The area surrounding the building is for the most part paved with asphalt and used for parking. The approach to the building from South Main Street is either via a long flight of stairs or a steep driveway.

Concrete Walks:

- Fair to poor condition. Surface deterioration from de-icing material, heaving from tree roots, settlement and cracking in many areas.

Walls and Stairs:

- All of the site walls and stairs are in poor condition. Sections of walls are out of plumb and in the process of overturning.
- Remove and reset deteriorating and settling stair treads and risers. Replace handrails with new railings meeting current safety codes.
- Remove and replace failing retaining walls with new concrete walls.

Asphalt Pavement/Parking:

- Fair to good condition with some cracking.
- There is no guiderail along the tops of embankment.
- Seal cracks in the asphalt driveway and parking area.
- Install guiderail along tops of embankments adjacent to the parking area.

Storm Drainage:

- Sheet flow to street and surrounding areas.

Handicapped Accessibility:

- Accessible entrances do not meet current standards. Accessible curb ramps do not meet current standards.
- Accessible parking spaces do not meet current standards.
- Re-grade the accessible parking space and define an accessible route to the building entrance.

Site Furnishings and Landscaping:

- Sections of fencing at the parking lot are rusted, coming apart, and knocked off-line.
- All landscape beds need refurbishing.
- Overseed and fertilize lawn areas. Clear brush away from edge of parking area.

ASBESTOS SUMMARY

Borton-Lawson conducted a limited environmental review on the Wilkes-Barre Area School District Administration Building located at 730 South Main Street, in Wilkes-Barre City, Luzerne County, PA. The building was built about 1900-1912 in a mixed commercial and residential area and is approximately 22,600± square feet. Based on a review of available AHERA information, asbestos-containing materials are known to be present in the building. Based on the age of construction of the building, it is anticipated that lead-based painted surfaces, PCB-containing light ballasts, mercury-containing fluorescent light bulbs and other potential hazardous substances are also present. BL recommends a hazardous materials building survey, including the confirmation of the types and quantities of hazardous materials, be conducted prior to any future renovation or demolition activities.

WILKES-BARRE TOWNSHIP MAINTENANCE BUILDING

WILKES-BARRE, PA

GENERAL DESCRIPTION

Original Construction -	Late 1930s - Early 1940s
Renovations -	N/A
IBC Construction -	Construction Type IIB
Site Acreage -	8.029 acres
Gross Building Area -	40,500 +/- SF
Current Enrollment -	N/A
Current Grades -	N/A
Number of Classrooms -	18 regular (original building)

OVERVIEW

The Wilkes-Barre Area School District Maintenance Building is a two-story brick and limestone building with partial basement which was built as the former Wilkes-Barre Township Junior High School. It is currently, and for the last 20 years or more, used as the School District's Maintenance Facility.

Built just before WWII, the former Township Junior High has a T-shaped circulation pattern. The top of the 'T' is a double-loaded corridor classroom wing, while the vertical leg of the 'T' has classrooms on one side and the double-height volume of the combination gymnasium-cafeteria-auditorium on the other.

The building's stripped-down classical style approaches the severe appearance of the American Art Moderne idiom popular in the late 1930s and early 1940s. In keeping with this style, abstracted cut limestone pilasters give character to the principal façade at the gymnasium and main entry. Unfortunately these larger stone assemblies are cracking from differential expansion and are in disrepair. The building's exterior presents a generally deteriorating appearance in the condition of its materials.

Historical Status

- The Maintenance Building is not on the National Register of Historic Places.

Statement of Functional Obsolescence

- The Maintenance Building has not been used as a school for an extended period. No rooms have been conformed to modern curricular uses in over two decades. While portions of the building are used for storage purposes, and the gymnasium is used for youth sports league play by the district, most of the building is effectively in disuse and shuttered.
- If the building were to be rehabilitated and modernized for use as a school once again, it is probable that the plan configuration would be reasonably adaptable to modern

curricular uses. The difficulty with this facility is its size; with only 18 classrooms, an addition would seem favorable, and yet the corridors are blocked at the ends by the stair towers. An addition project at this facility would require major reconfiguration of the building floor plan. Given the condition of the building inside and out, it is not at all clear that this building could be economically reconditioned or added on to, despite its large site.
- Re-purposing of the Maintenance Building at this time as a school is questionable, as the building is to the far edge of the District's geographical population center, as it is the only District building located on the east side of Route 309.

Code Compliance

- This building is in partial use. If the building were to re-open as a school, a comprehensive code compliance program across all building systems would be required. The building has no elevator, and ADA-compliant accessible routes do not exist as there are exterior site stairs to the main entrance. Stair towers have glass separations and are not rated, though they could be made so.
- In terms of ADA compliance, devices and restrooms are completely non-compliant. In summation, due to the fact that no program of major interior improvements has ever been implemented in the building, most appurtenances, fittings, and amenities are original. The building does not resemble a modern building in any way.
- In conclusion, code compliance of this building can be considered to be deficient at most levels of fire separation, egress, stair and railing compliance, fire alarm, smoke detection, restroom configuration, and location of ADA devices in terms of height from floor. Please note that typical of the older elementary schools and junior high schools in the WBASD, this building has no dedicated kitchen facilities.

ARCHITECTURAL ASSESSMENT:

Exterior Envelope:

Roof System:

- The roof at Dodson has been inspected by the WBASD independent roofing consultant, Mark J. Sobeck Roof Consulting; the roof is conditionally rated mostly in the 'C' to 'F' category.
- This represents a generally poor rating for the roofing system.

Windows:

- Windows are original steel and/or wood fixed or single-hung windows with non-insulating glass and are generally in poor condition. The windows are recommended to be placed on a maintenance program for replacement for any other use for the building other than its current use as a maintenance facility.

Exterior Masonry:

- As stated above, the Maintenance Building's exterior brick and limestone masonry is deteriorated and in poor condition. A significant masonry restoration and repointing program is indicated at this time to arrest accelerating deterioration.

Interior Finishes:

Walls and Plaster:

- The Maintenance Building has non-structural cracking of plaster and areas of bubbling and/or degradation where localized water and/or moisture infiltration has entered the building. This condition exists in many areas of the upper floor under the roof.

Ceilings:

- Ceilings are mostly plaster and have issues similar to the walls.

Flooring:

- The building's flooring is 20 years in disuse. All floors in this building require completely new installations.

Doors and Hardware:

- Doors are original and often swollen or warped from years of being in a largely unheated building. All doors and hardware would need to be replaced.

Paint:

- Generally, all wall surfaces in the building are in major disrepair due to leaking or condensation. Peeling is pervasive.

STRUCTURAL ASSESSMENT

General

- Building is a two-story, steel-framed, partially subterranean structure.
- Roof framing consists of reinforced concrete-filled mesh form slab spanning across open web steel joists supported by interior structural steel girders and columns and load-bearing masonry exterior walls.
- Floor framing consists of reinforced concrete-filled mesh form slab spanning across open web steel joists supported by interior structural steel girders and columns and load-bearing masonry exterior walls.
- Gymnasium roof framing consists of metal deck spanning across open web steel joists supported by load-bearing masonry exterior walls.

- Exterior walls are brick veneer backed by load bearing masonry.

Interior

- Visible wall, ceiling and floor surface conditions are acceptable.
- Visible structural elements show minimal signs of corrosion, damage, cracking, settlement or deterioration.
- Localized cracks in masonry finishes are indicative of minor, non-structural movement. Some settlement cracks are evident but appear to be stabilized as continued movement is not indicated.
- Corner cracks in the plaster finishes of the classrooms are indicative of minor, non-structural movement.
- Water staining of the ceiling and wall finishes in some areas is indicative of previous leaks where water infiltration has caused damage including cracking, spalling, sagging and bubbling of the plaster finishes. While not indicative of failure to structural elements beneath, long term exposure to moisture can deteriorate framing, beams and columns with rot, corrosion and loss of section to the degree of reducing structural load-carrying capacities. That being said, areas where such water damage was noted to the ceiling and wall finishes did not present additional visual clues indicating structural failure of the hidden structural elements. However, continued monitoring of these areas for further water infiltration is recommended.

Exterior

- Visible exterior surfaces are, in general, good condition.
- Visible brick veneer shows no excessive cracking, spalling or settlement damage.
- Many areas of the brick veneer require repointing and sealing to prevent water infiltration.
- Most of the opening lintels show no visible signs of excessive deflection or displacement. Several of the windows and door openings are showing corrosion due to water exposure and should be cleaned, primed and painted in the near future.
- Stone veneer joints require repointing and sealing to prevent water infiltration.
- The prefabricated modular building added to the original building is in poor condition. The roof is deteriorated and the fascia and gutter system is failing.

MECHANICAL ASSESSMENT:

Heating System:

- Two (2) natural gas boilers were originally installed to provide heat for this building. Currently one of the boilers is not operational and has been disconnected from the steam header; the other boiler had been recently replaced.
- The new boiler is a Series: 3, Model: 994 as manufactured in 2009 by Weil-McLain.
- An existing condensate receiver with integral pump is located in the boiler room.
- The boiler is fired with a natural gas burner as manufactured by Power Flame, Model: WCR3-G-20, Serial Number: 120936131, with a minimum firing rate of 900 MBH and a maximum firing rate of 2887 MBH.

- The boiler feed unit is interlocked with the boiler operation
- An automatic chemical feed unit has been installed and connected to the boiler make-up to the condensate receiver.
- The breaching at the rear of the boiler should be insulated to avoid burns to personal.
- Emergency boiler off-switches have been installed at boiler exits.
- Combustion air for the boilers is not adequate. A single grille has been installed in the exterior wall. The IFGC requires a two permanent opening one with in 12" of the ceiling and one with in 12" of the floor, and sized for the total firing rate of equipment located in the room.

Cooling:

- Central cooling was not installed at this building.

Classrooms/ Library: (converted to storage areas)

- Classrooms are heated with steam radiators and classroom unit ventilators with steam coils. Ventilation for the classrooms is provided by the unit ventilator.
- Steam and condensate piping is exposed. The piping should be insulated to minimize the possibility of accidental burns. At a minimum the piping should be insulated to approximately eight (8 lf) feet above the finish floor.

Transportation Office:

- The office is heated with steam radiators and classroom unit ventilator with steam coils. Ventilation for the classrooms is provided by the unit ventilator.
- A window air conditioning unit has been installed.

Admin/ Office Area:

- The office areas are heated with steam radiators and classroom type unit ventilators with steam coils.
- A window air conditioner has been installed in the Admin Assistants offices.
- Ventilation for these areas is provided via operable windows.

Toilet Rooms: (Boys, Girls, Facility)

- Exhaust is provided for the Boys and Girls Toilet Room by means of transfer air wall grilles. The pipe chase is located behind the water closets. A plenum exhaust system was installed to provide exhaust for the toilet rooms. The exhaust fan is located on the upper floor and is currently non-operational. This type of exhaust system does not provide adequate exhaust for the for the toilet rooms when operating.
- The office area toilet rooms have individual ceiling cabinet fans and are ducted to the exterior of the building. The exhaust appears not to be adequate for the toilet rooms.
- Some of the Faculty-Admin toilet rooms do not have any means for exhausting the rooms. Toilet room exhaust is required by the IMC (International Mechanical Code).

Janitor Closets:

- Exhaust is not provided for the Janitor Closets.

Corridors:

- Wall mounted steam radiators and ceiling mounted unit heaters provide heating for the corridors.
- Currently there is no means for mechanical ventilation of the corridor areas.
- The steam radiators do not have covers there by exposing the heating elements. The radiators should be provided with covers to alleviate the possibility of accidental burns from the hot surfaces.
- Steam and condensate piping is exposed and should be insulated. At a minimum the piping should be insulated from the floor to approximately eight (8 lf) feet above the finish floor.

Emergency Generator:

- None installed at this facility

Gymnasium/ Auditorium/Cafeteria (converted to storage area):

- Two (2) air-handling units with integral steam coils provide heating for this area. The air handlers have outdoor air intakes providing ventilation for the Gymnasium. The quantity of outdoor air for ventilation to this area could not be determined.
- Currently there is no food prep or refrigeration equipment at this site.

Lockers/Showers/Toilet Areas:

- Exhaust was not installed for these areas.
- Direct ventilation to the space was not provided.

Weight Room:

- Direct ventilation or exhaust was not installed for this area.

Corridors/ Stairwells:

- Steam baseboard and ceiling mounted unit heaters have been installed to provide heating for the corridors.
- There is no mechanical ventilation in the corridor areas.
- Wall mounted steam convectors provide heating for the stairwell.
- The steam radiators do not have covers there by exposing the heating elements. Seating is arranged so that the backs of the student's seats are close to the radiators. The radiators should be provided with covers to alleviate the possibility of burns from the hot surfaces.
- Steam and condensate piping is exposed. At a minimum the piping should be insulated to approximately eight (8 lf) feet above the finish floor to minimize the possibility of accidental burns.

Automatic Controls:

- A single thermostat located in the Admin area controls the boiler.
- A local thermostat located in each classroom is interlocked with the classroom unit ventilator.

PLUMBING ASSESSMENT:

Domestic Water Service:

- A 2" domestic water service enters the Basement Boiler Room. The meter and backflow preventer are located in the Boiler Room. The piping is not insulated.

Domestic Hot Water:

- The domestic hot water is produced off the Weil McLain Heating Boiler. The 1 1/2" hot water main is tempered with a mixing valve.

Natural Gas Service:

- The natural gas service enters the basement boiler room. It serves the gas fired boiler. The meter is located outside the boiler room.

Sanitary & Storm Sewers:

- The sanitary sewer is assumed to exit the building towards Casey Avenue.
- The storm sewer is collected with roof drains in the interior of the building. The storm piping is assumed to exit the building towards Casey Avenue.

Kitchen:

- There is no kitchen.

Plumbing Fixtures:

- The plumbing fixtures appear to be original, are very old, and are in poor condition. The fixtures should be replaced to meet allowable flow rates and consumption for plumbing fixtures set by the International Plumbing Code. The fixtures should comply with the Americans with Disabilities Act.

Fire Protection:

- There is no fire protection.

ELECTRICAL ASSESSMENT:

Incoming Electrical Service:

- The existing electrical service is 120/240V, 3PH, 4W, 600 amps. The most recent maximum demand occurred between February 2014 and March 2014, was 41 KW which is approximately 99 amps. Based on PP&L's maximum demand readings the building is only using 16% of its designed capacity.

Existing Power Distribution:

- The Existing 120/240V, 3PH, 4W, 600 Amp rated Main Distribution Panel (MDP) is in fair condition. The panel has future space for additional loads.
- The existing subpanels are 120/240V, 3PH, 4W, and are antiquated. The panels should be replaced due to age and availability of spare parts.

Emergency Lighting and Exit Signs:

- The existing emergency lighting system is provided by emergency battery power packs. Battery packs appear to be in good working order. Exit signs are old fluorescent type and should be replaced with new self-contained LED style exits.

Fire Alarm System:

- The fire alarm system is old and should be replaced with an ADA compliant system.

Lighting General Areas:

- Lighting in corridors, office's, mechanical and storage areas is not up to current lighting standards. Fixtures are old and lenses are yellow which reduces the efficiency of the fixture while reducing light output. These fixtures should be replaced with current energy saving fluorescent technology.

Typical Classroom:

- Lighting in classrooms is old and should be replaced with current energy saving lighting technology.
- Classrooms don't have an adequate quantity of receptacles. If the classrooms are to return to service additional receptacles should be added.

Telephone and Intercom System:

- Telephone system in office area was recently replaced with a voice over internet protocol (VoIP) system.

Data System:

- Data jacks should be added to Maintenance office and select locations for personnel needs.

SITE ASSESSMENT:

The Maintenance Building is located in Wilkes-Barre Township along Casey Avenue between Business Route 309 and Northampton Street, in the former Wilkes-Barre Township High School building. The building is on a plateau overlooking Casey Avenue adjacent to the south bound lanes of Interstate Route 81. Single family residences adjoin the northerly side of the property and a commercial property lies directly across the street. The southerly end of the property is bounded by Interstate Route 81 and Business Route 309. The Maintenance Building occupies approximately one quarter of the plateau at the northern end with the remainder of the property developed as athletic fields.

Concrete Walks:

- Walks are in fair to poor condition. The surface is deterioration from de-icing material, settlement, cracking in many areas, and vegetation growing in joints.

Walls and Stairs:

- The site walls and stairs are generally in poor condition. Sections of walls are out of plumb and in the process of overturning, wall face stone is working loose. Stone stairs are settling and concrete stairs are deteriorating. Hand rails along stairs and on top of walls do not meet current design standards.
- Demolish the walls, stairs and walks in front of the building leading down to Casey Avenue. Re-grade to create sloped embankments and seed to lawn.

Asphalt Pavement/Parking:

- Pavement is in fair to poor condition with some cracking base failure and pot holes.
- Replace cracked and settled concrete walks throughout site.
- Provide accessible parking spaces and accessible route to building meeting current ADA design standards. Construct accessible ramp to main entrance.
- Replace handrails around areaways with new guard railing to comply with current safety codes.
- Remove and replace asphalt drives, walks and storage areas throughout site.

Storm Drainage:

- Storm flows are directed to storm drains at the back side of the building. Storm drainage in the front and sides of the building and at the athletic fields sheet flow to the adjacent streets.
- Clean out on-site storm drains.

Handicapped Accessibility:

- There are no provisions for handicapped accessibility.

Site Furnishings and Outdoor Landscaping

- Sections of fencing at the parking lot are rusted, coming apart, and knocked off-line.
- All landscape beds lawns and need refurbishing.
- Athletic fields include a rectangular field currently lined out for field hockey, a gravel parking area and a softball field. The parking area is situated between the field hockey and the softball fields with access from the school building area via a gravel road running along the south side of the property. The parking area can accommodate approximately 35 automobiles and is in poor condition. The softball field is in fair condition requiring routine maintenance but the surrounding fencing, backstop, press box building benches and bleachers are in poor condition. The field hockey field is in fair condition requiring routine maintenance.
- Repair chain link fencing.
- Restore and reseed lawn areas around the maintenance building.
- Reconstruct gravel access road along east side of athletic field and parking area between athletic field and softball field.
- Remove and replace softball backstop.
- Repair fencing surrounding softball field.
- Repair press box building.
- Restore skinned infield

- Demolish wood bleachers at softball field and replace with aluminum bleachers.
- Aerate, top dress, over-seed and fertilize athletic field and softball field.
- Refurbish planting beds throughout site. Prune trees and shrubs.

ASBESTOS SUMMARY

Borton-Lawson conducted a limited environmental review on the Wilkes-Barre Area School District Maintenance building located in Wilkes-Barre Township, Luzerne County, PA. The building is the former Wilkes-Barre Township High School and was built in the late 1930s or early 1940s in a mixed commercial and residential neighborhood and is approximately 40,500 ± square feet. Based on a review of available AHERA information, asbestos-containing materials are known to be present in the building. Based on the age of construction of the building, it is anticipated that lead-based painted surfaces, PCB-containing light ballasts, mercury-containing fluorescent light bulbs and other potentially hazardous substances are also present. BL recommends a hazardous materials building survey, including the confirmation of the types and quantities of hazardous materials, be conducted prior to any future renovation or demolition activities.

FORMER PLAINS JUNIOR HIGH SCHOOL
WILKES-BARRE, PA

GENERAL DESCRIPTION

Original Construction -	c. 1915-1930
IBC Construction -	Construction Type IIB
Site Acreage -	2.0 +/- acres
Gross Building Area -	60,000 +/- SF
Current Enrollment -	Leased to LIU-18
Current Grades -	N/A
Number of Classrooms -	N/A

OVERVIEW

The Luzerne Intermediate Unit 18 (LIU) provides educational services to approximately 180 students at the Alternative Learning Center. The Center provides educational services to students who have had difficulty succeeding in a traditional school setting. The Center is housed on approximately two acres at the former Plains Jr. High School site.

ARCHITECTURAL ASSESSMENT

The existing facility is nearly 100 years old. The building is three stories and totals approximately 60,000 SF.

Exterior Construction:

- The exterior envelop includes heavy masonry walls with face brick and a red stone foundation, metal and wooden windows, and aluminum entry doors.
- All windows should be replaced.
- Masonry brick and foundation stone should be pressure washed, repaired, and re-pointed.
- Parapet walls should be repaired and re-pointed.
- Entry stairways, landings and railings should be replaced.
- Entry doorways and hardware should be replaced.
- Entry canopies, stairs, and ramps that comply with ADA access should be constructed.
- The stone retaining wall along West Carey Street should be demolished and replaced.

Interior:

- The building's interior includes heavy masonry walls with wood studs and plaster along with drywall walls, wooden and metal interior doors, plaster ceilings, carpeting and vinyl tile flooring.
- Restrooms should be modified to comply with ADA requirements.
- Ceilings and walls have water damage and are in need of repair.
- Temporary measures constructed to address the Center's operational needs and educational programming are past their useful life and need to be replaced with permanent construction.

- Interior stairways should be demolished and replaced.
- Demolition of plaster ceilings and replacement with acoustical ceilings.
- Demolition and replacement of wall and floor finishes, doors, frames, and hardware.
- Supplemental attic insulation should be provided.
- Insulation should be added to the exterior walls.
- A passenger elevator to allow wheelchair access to all main floor areas should be added.
- A secure entrance should be added.

MECHANICAL, ELECTRICAL AND PLUMBING ASSESSMENT:

- The existing fire alarm system is outdated and there are few security measures. A fire alarm system and security measures should be added.
- The bulk of the electrical system and all plumbing fixtures fail to comply with code and are outdated, inoperable, past their useful service life, or are in need of replacement.
- Mechanical ventilation should be provided.
- The heating system should be demolished and replaced.
- Exterior lighting should be added.
- All plumbing fixtures should be removed and replaced.
- All lighting fixtures should be removed and replaced.

SITE ASSESSMENT:

- The Former Plains Junior High School Building is located on West Carey Street in Plains Township in a residential neighborhood. The site can also be accessed via Margaret Street at the rear. The building is currently not utilized as a school (closed mid-1990s) but is leased by the Luzerne Intermediate Unit (LIU) for various functions. The building is constructed on a sloping site with level terraces for parking and former play areas. The site includes a stone retaining wall along the municipal sidewalk at the front. The areas surrounding the building are comprised of lawns, asphalt parking, former play areas and paved driveways. There is ample on-site parking.

- Concrete Walks, Stairs, and Retaining Wall:
    - All on-site walks and stairs are in poor condition.
    - Demolish and reconstruct stairs to comply with current accessibility codes.
    - Provide accessible parking spaces and accessible route to building, meeting current ADA design standards.
    - Replace cracked and settled concrete walks throughout site.
    - Portions of the site retaining walls are in poor condition. Walls are leaning, cracked, and some stone caps are missing. Demolish and reconstruct portions of retaining walls or re-grade lawn to eliminate retaining walls. There are no railings on the top of walls. Replace handrails with new guard railing to comply with current safety codes.

- Asphalt Pavement/Parking:
    - On-site pavement is worn out with severe cracking and base failures.
    - Remove and replace asphalt drives, parking, walks and playground areas throughout site.

- Storm Drainage:
  - Substantial ponding is present on the site which could be reduced with re-grading as part of pave reconstruction work.
  - On-site storm drains need cleaning and frames reset. Clean out on-site storm drains.

- Handicapped Accessibility:
  - Accessible entrances are not present.
  - There are no accessible parking spaces.

- Site Furnishings and Outdoor Landscaping:
  - The site is only partially fenced. Sections of fencing at the parking lot are in need of repair. Repair chain-link fencing.
  - Plants are overgrown and invading pavement.
  - All landscape beds need refurbishing.
  - Restore and reseed lawn areas. Fill in along sidewalk edges and restore lawn.
  - Refurbish planting beds throughout site. Prune trees and shrubs.

- Water, sewer, and utility improvements:
  - Provide water, sewer and utility improvements as necessary.

Analysis of New Secondary Center Sites

ANALYSIS OF NEW SECONDARY CENTER SITES

The District Board directed the following sites be conceptually reviewed and presented for consideration.

A. Solomon/Plains Parcel
B. Biscontini Parcel
C. Pagnotti Parcel
D. Murray Complex/Siniawa Parcel
E. Empire Street Parcel
F. Coughlin Parcel
G. Meyers Parcel

A location map, following, identifies the sites studied.

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WILKES-BARRE AREA SCHOOL DISTRICT PROPOSED SITES

1 - SOLOMON/PLAINS PARCEL
2 - BISCONTINI PARCEL
3 - PAGNOTTI SITE
4 - MURRAY COMPLEX/SINIAWA PARCEL
5 - EMPIRE STREET PARCEL
6 - COUGHLIN PARCEL
7 - MEYERS PARCEL

Barton & Lawson
LEI
WKL ARCHITECTURE

Solomon/Plains Parcel
PLAINS TOWNSHIP, PA and Wilkes-Barre City, PA

SITE ACREAGE: 22.75 acres

SITE CONDITIONS:

- General Description:
  - The Solomon Plains Parcel Site is located at 41 and 43 Abbott Street in Plains Township spanning the border between Plains Township and the City of Wilkes-Barre. Approximately 42% of the parcel lies within Plains Township with the remainder in the city. Access to the parcel is from Plains Township via Abbott Street from the north and South Main Street from the west. Currently the Solomon Elementary School/Junior High School occupies the westerly part of the parcel in Plains Township with the remainder developed as an athletic complex including a running track, multiple athletic fields and a field house. The site is generally flat to gently sloping and is accessible on foot from the surrounding residential neighborhoods.
  - The portion of the site in Plains Township falls within an R-2 Two Family Residential District where School Use is not a permitted use while the portion in Wilkes-Barre is in an R-1 Single Family District where School Use is permitted by Special Exception. The Zoning Hearing Boards for Plains Township and for Wilkes-Barre City must approve variances and special exceptions as required for work within their respective jurisdictions.
  - The parcel is outside of the 100 year (1% annual chance of flooding) and 500 year (.2% annual chance of flooding) Flood Plains as mapped on the Luzerne County Flood Insurance Rate Map.
  - Historic land use included strip mining and deep mining as noted in the Geotechnical report prepared in 1994 by Geo-Science Engineering for the elementary school construction. Any proposed buildings must take into account the subsurface conditions and be designed to resist subsidence.
  - The southeast edge of the property abuts the Canadian Pacific railroad main line on the former Wilkes-Barre Connecting Railroad.

- Vehicular Access:
  - Vehicular access to the proposed High School will be from the existing roads that currently serve the Solomon Elementary School/Junior High School. Proposed bus and vehicular parking areas are along the east side of the existing junior high school parking areas, in portions of the existing athletic fields.

- Pedestrian Access:
    - Pedestrian access to the site is from the existing street network to the east and north of the parcel. Access from the east and south is restricted by the Canadian Pacific railroad right of way and an existing trucking facility.

- Utilities:
    - Utility services such as gas, water, electric, tele-communications and storm are available from the nearby streets.
    - A sanitary sewer main from Plains Township to Wilkes-Barre cuts through the southern end property.

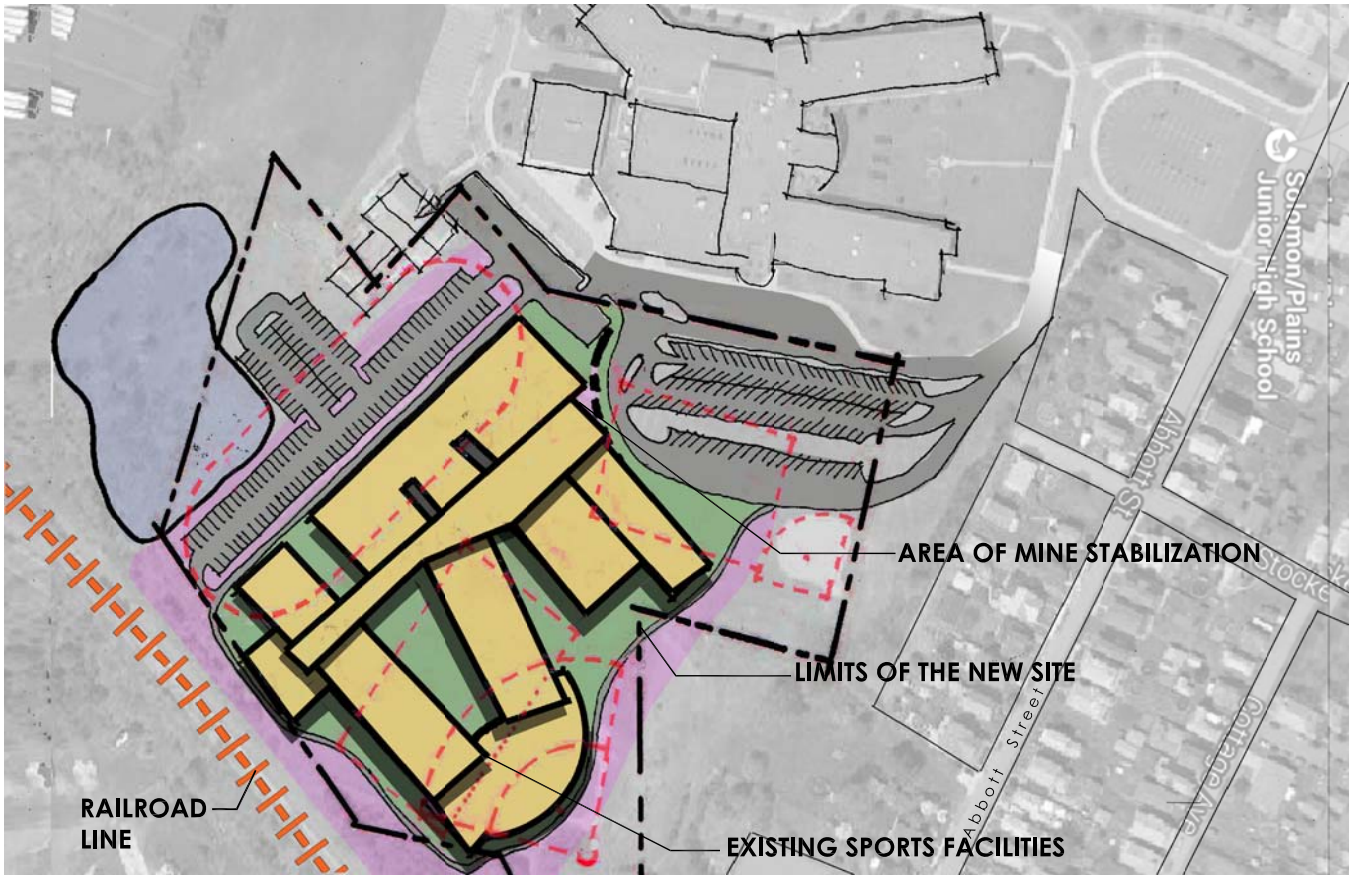
- Proposed Site Plan:
    - The proposed high school site layout disrupts 70 % of the existing athletic complex occupying the easterly part of the site. The softball field, baseball field and running track are demolished to accommodate the proposed building, parking lots, roadways and related improvements leaving only the field house and field hockey field intact for continued use. The demolished facilities will have to be reconstructed at another location if the school district intends to maintain the current level of support for the various athletic programs offered by the school district.
    - The parking lot arrangement separates the bus area from vehicular drop-off/pick-up traffic and from staff and student parking areas. Busses discharge directly on to walks at the main building entrance away from traffic flows. Approximately 260 parking spaces are provided for visitor, staff and student parking. A large plaza at the entrance accommodates students during the day and provides gathering and queuing space during special events.
    - The project area for the high school totals approximately 16 acres with the building accounting for 5 acres, the roads and parking 3.6 acres and the remaining 7.4 acres including vegetated embankments, lawns and walks.

SOLOMON / PLAINS PARCEL - ADVANTAGES

- Property is owned by the school district.
- Accommodates 1,200 students and minimal parking.
- Good access from adjacent road network.
- Readily available utilities.
- Gentle existing grades, cleared site, and out of Susquehanna River flood plain.
- Central location to Laflin, Plains, and the Miners Mills and North End sections of Wilkes-Barre.
- Opportunity for educational and site synergies with adjacent facilities.

SOLOMON / PLAINS PARCEL - DISADVANTAGES

- Sports complex would be lost/require reconstruction on another site.
- Immediately adjacent to an active railroad main line.
- Mine stabilization required.
- Must relocate existing sports facilities.
- Limited capacity (1,200) without additional costs/ limited space for expansion. (22.75 Acres)
- Vehicle/bus circulation: difficult to accommodate
- Increase in traffic on adjacent residential road network
- Uncertain geotechnical and soils issues due to past mining.



Biscontini Parcel

PLAINS TOWNSHIP and Wilkes-Barre City, PA

SITE ACREAGE: 19.63 acres

SITE CONDITIONS:

- General Description:
  - The Bisconiti site is located in western portion of Plains Township and Wilkes-Barre City situated between South Main Street to the west, the North Cross Valley Expressway (Route 309) to the south, the Canadian Pacific railroad main line on the former Wilkes-Barre Connecting Railroad to the east and the existing Solomon Elementary / JHS to the north. Direct access to the parcel can be gained from either South Main Street or the existing access drive to the Solomon Elementary / JHS.
  - The site currently contains an existing warehouse approximately 145,000 square feet in size on the northern half of the property with a rail spur connecting to the existing rail line on the eastern portion of the property. The southern half of the property is primarily wooded with some open, barren areas which appear to have been used for illegal dumping in the past. The surface of the site in the southern half appears to have been repeatedly disturbed by mining activities, and mining records indicate an abandoned mine shaft is located in the southerly portion of the site approximately 300 to 400 feet south from the existing warehouse building. Records were not readily available on the status of this opening or if it had been previously remediated. More investigation of this issue would be required.
  - The topography on the northern portion of the site, where the existing warehouse is constructed, is generally flat, sloping at approximately 1.0% from the front along South Main Street, to the rear near the rail line. The southern, undeveloped portion of the site can be described as a knoll from its frontage with South Main Street and slopes back into the site at generally steep slopes (15% to greater than 25%) with a few flatter areas near the southern property line.
  - The site falls within an I-1, General Industrial District in Plains Township where School Use is not a permitted use. A zoning variance or zoning district revision for the Plains Township portion of the parcel will be required to construct the School Use in the I-1 District. The Wilkes-Barre City portion of the site is zoned M-2, Heavy Industrial District which likewise does not permit a School use and would also require a zoning variance or zoning district revision for the Wilkes-Barre City portion of the parcel.
  - The parcel is outside of the 100 year (1% annual chance of flooding) and 500 year (.2% annual chance of flooding) Flood Plains as mapped on the Luzerne County Flood Insurance Rate Map.

- Vehicular Access:
    - Vehicular access to the proposed High School will be from the existing Solomon Elementary / JHS driveway off South Main Street to the northern portion of the parcel with a secondary access on the southern portion of the parcel directly off South Main Street.

- Pedestrian Access:
    - Pedestrian access will be generally from the residential neighborhoods to the north. The walks up to the school from South Main Street will link the school to the nearby residential neighborhoods. The walk along South Main Street will be improved to reinforce the pedestrian link from the proposed high school to the athletic facilities at the Solomon School Complex.

- Utilities:
    - Utility services such as gas, water, electric, tele-communications and storm are available from the nearby streets. Offsite utility extension will be necessary.
    - A sanitary sewer main is located near the existing access drive to the Solomon Elementary/JHS and through the southern portion of the existing school property.

- Proposed Site Plan:
    - The proposed site plan positions the high school building in the northeast corner of the property close to the residential neighborhoods and adjacent street network. The project construction roughly covers the entire parcel. Under the 2,600 student building scenario, the building accounts for 4.2 acres, parking and roads 10.2 acres with the remaining approximate 5.3 acres comprised of lawns, landscaped areas, embankments and outdoor activity areas.
    - The parking lot arrangement separates the bus area from vehicular drop-off/pick-up traffic and from staff and student parking areas. Buses discharge directly on to walks at the main building entrance away from traffic flows. Approximately 398 parking spaces are provided for visitor, staff and student parking. A large plaza at the entrance accommodates students during the day and provides gathering and queuing space during special events.
    - Athletic practice and events will continue at the existing Solomon Elementary School/Junior High School immediately adjacent to the site.
    - Site storm drainage will be managed with detention and infiltration facilities incorporating best management practices. Storm flows discharged from these facilities will be directed to existing drainage channels and storm drainage systems.

BISCONTINI PARCEL - ADVANTAGES

- Accomodates 1,200 students & related parking. (16.2 Acres)
- Readily available utilities & access to/from adjacent road network.
- Existing grades are gentle, cleared site, out of flood plain, & significant impervious areas.
- Updated stadium with new bleachers and turf field.
- New and modified Physical Education Fields.
- Opportunities for shared parking and fields & sports complex use.
- Opportunity for educational and site synergies with adjacent facilities.
- Central location to Laflin, Plains, and the Miners Mills and North End sections of Wilkes-Barre.

BISCONTINI PARCEL - DISADVANTAGES

- Land acquisition cost.
- Demolition Costs.
- Disruption/relocation of existing businesses if developed.
- Immediately adjacent to an active railroad main line.
- Existing pedestrian walkways unavailable to students from the North End section of Wilkes-Barre.
- Uncertain geotechnical and soils issues due to past mining.

Pagnotti Parcel
PLAINS TOWNSHIP, PA

SITE ACREAGE: 80 acres North of North Cross Valley Expressway

SITE CONDITIONS:

- General Description:
    - The portion of the Pagnotti Parcel Site on the north side of the North Cross Valley Expressway is approximately 80 acres and is located in western Plains Township situated between South Main Street to the east, Maffett Street to the west and the North Cross Valley Expressway (Route 309) to the south. Direct access to the parcel can be gained from either South Main Street or Maffett Street both of which are urban collector streets. Regional access is readily available from the North Cross Valley Expressway with an off ramp exiting on to South River Street near the intersection with Maffett Street.
    - The surface of the site has been repeatedly disturbed by mining activities, being utilized initially as a mine spoil dump from deep mining at by on-site collieries, strip mined and most recently as a culm ash disposal site as part of a mine reclamation project. Remnant concrete and foundations from demolished mine buildings are present and mining records indicate an abandoned mine shaft is located in the southerly portion of the site approximately 200 feet from the boundary with the North Cross Valley Expressway.
    - The topography of the parcel can be described as a knoll with steep perimeter slopes rising to a general plateau area 40 to 60 feet above the surrounding neighborhoods. Excavated material piles are located throughout the plateau rising to heights of approximately 40 feet above the elevation of the plateau. The ground surface is comprised of mine spoil material sparsely vegetated with scrub trees and brush.
    - The site falls within an R-3 Multi-Family Residential District Family where School Use is not a permitted use. A zoning variance or zoning district revision will be required to construct the School Use in the R-3 District.
    - The parcel is outside of the 100 year (1% annual chance of flooding) and 500 year (.2% annual chance of flooding) Flood Plains as mapped on the Luzerne County Flood Insurance Rate Map.

- Vehicular Access:
    - Vehicular access to the proposed High School will be from Maffett Street and South Main Street. The driveway off of Maffett Street will be cut into the existing embankment climbing 40 feet to the school at a 6% grade. Two driveways access the site from South Main Street. The northerly driveway enters at the top of the hill on South Main Street and descends

at a 3% grade down to the school while the southerly driveway climbs 30 feet at a 6% grade to reach the building pad.

- Pedestrian Access:
  - Pedestrian access will be generally from the residential neighborhoods to the north. The walks up to the school from both Maffett Street and from South Main Street will link the school to the nearby residential neighborhoods. The walk along South Main Street will be improved to reinforce the pedestrian link from the proposed high school to the athletic facilities at the Solomon School Complex ½ mile away.

- Utilities:
  - Utility services such as gas, water, electric, tele-communications and storm are available from the nearby streets.
  - A sanitary sewer main is located in Maffett Street.

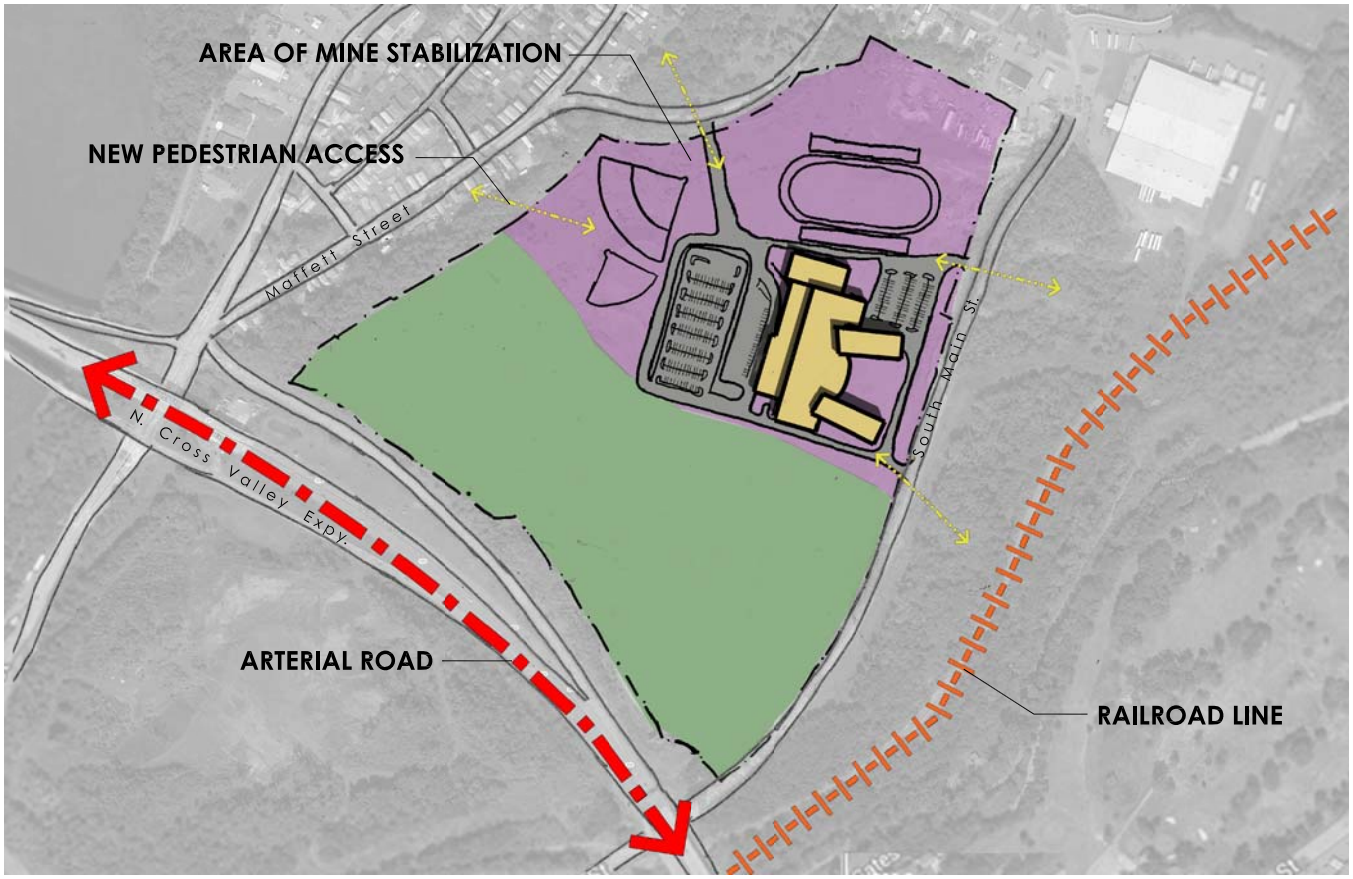
- Proposed Site Plan:
  - The proposed site plan positions the high school building in the northeast corner of the property close to the residential neighborhoods and adjacent street network. The project construction area totals 37 acres or roughly 46% of the parcel located on the north side of the Cross Valley Expressway. The building accounts for 4.6 acres, parking and roads 10.6 acres with the remaining 21.8 acres comprised of lawns, landscaped areas, embankments and outdoor activity areas.
  - The parking lot arrangement separates the bus area from vehicular drop-off/pick-up traffic and from staff and student parking areas. Buses discharge directly on to walks at the main building entrance away from traffic flows. Approximately 366 parking spaces are provided for visitor, staff and student parking. A large plaza at the entrance accommodates students during the day and provides gathering and queuing space during special events.
  - Athletic practice and events will continue at the existing Solomon Elementary School/Junior High School complex ½ mile away.
  - Site storm drainage will be managed with detention and infiltration facilities incorporating best management practices. Storm flows discharged from these facilities will be directed to existing drainage channels and storm drainage systems.

PAGNOTTI PARCEL - ADVANTAGES

- Accomodates 1,200 or 2,500 student capacity & related parking.
- Large site available. Can accommodate school building, parking and sports facilities if necessary. (80 Acres)
- Good access from city streets and close to regional arterial highway.
- Centralized location for northeastern section of school district.
- Visually prominent location.
- Utilities available from nearby streets & close to existing sports facilities at Solomon.
- Out of Susquehanna River flood Plain.

PAGNOTTI PARCEL - DISADVANTAGES

- Steep slopes, former mining site, & uncertain geotechnical & soils issues.
- Long utility extensions into site from nearby streets.
- Isolated from city and surrounding neighborhoods.
- Land acquisition cost.
- Development costs: high due to poor soil, difficult terrain, lack of site infrastructure, and need for access roads/drives.
- Existing pedestrian walkways unavailable to students from the North End section of Wilkes-Barre.



Murray Complex/Siniawa Parcel

WILKES-BARRE, PA

SITE ACREAGE: 11.49 acres

SITE CONDITIONS:

- General Description:
  - The Murray Complex/Siniawa Parcel Site is located along Pennsylvania Avenue in center city situated approximately ¾ of a mile west of Coughlin High School and 1 mile east of Meyers High School. The site is generally flat, irregularly shaped, approximately 490 feet at the widest by 1500 feet long situated in a northeast / south west orientation. The parcel is comprised of four lots totaling approximately 12.54 acres with an exclusion of 1.05 acres for areas of East Ross Street and Pennsylvania Avenue contained within. The result of the exclusion is a net usable area of approximately 11.49 acres. The excluded area runs through the center of the site and would have to be abandoned by the city in order to make the four parcels contiguous and viable for development as a high school.
  - The site is in a C-4 Heavy commercial zoning district. High school use is not a permitted use in the C-4 district and will require variances granted by the Wilkes-Barre Zoning Hearing Board.
  - The parcel was previously developed as a manufacturing facility for wire rope and abuts a railroad branch line along its easterly border. Most of the former complex has been razed with the exception of one building located more or less in the center of the site.
  - The property is protected from flooding by the Wilkes-Barre levee system managed by the Luzerne County Flood Protection Authority. The site is in an area identified as "Other Flood Areas" on the Luzerne County Flood Insurance Rate Map and is noted as being protected from "the 1% annual chance or greater flood hazard by a levee system that has been provisionally accredited."

- Vehicular Access:
  - The northern property boundary is adjacent to Pennsylvania Avenue, an urban arterial roadway with two lanes in each direction, a median and left turn lanes. Vehicular access to and into the site is excellent with ample space for bus turning and maneuvering. Primary ingress and egress to the site is from Pennsylvania Avenue at an existing signaled intersection. A secondary point of access may also be possible off of Hazle Street where the site abuts the street right of way for a distance of approximately 50 feet. Pennsylvania Avenue is a state highway and a Highway Occupancy Permit issued by PennDOT will be required for driveway access. Hazle Street is a city street and a driveway permit from the city is needed for access.

- Pedestrian Access:
    - Wilkes-Barre has a highly developed urban sidewalk network extending throughout the city. The Murray Complex/Siniawa Parcel Site is within walking distance of significant portions of south Wilkes-Barre and the center city area but Pennsylvania Avenue tends to isolate the site from these areas due to its width and traffic volume. The railroad to the east cuts off access from the Heights section of the city forcing westbound pedestrian traffic to Hazle Street or Northampton Street in order to get to the site. Sidewalks fronting the property along the easterly side of Pennsylvania Avenue are in a state of disrepair with sections missing altogether.

- Utilities:
    - Utility services such as gas, water, electric, telecommunications, storm and sanitary sewerage are available from the nearby streets. Utilities located within the East Ross Street right of way that traverses the property, such as sanitary sewer mains, must be relocated to avoid conflicts with proposed building construction.

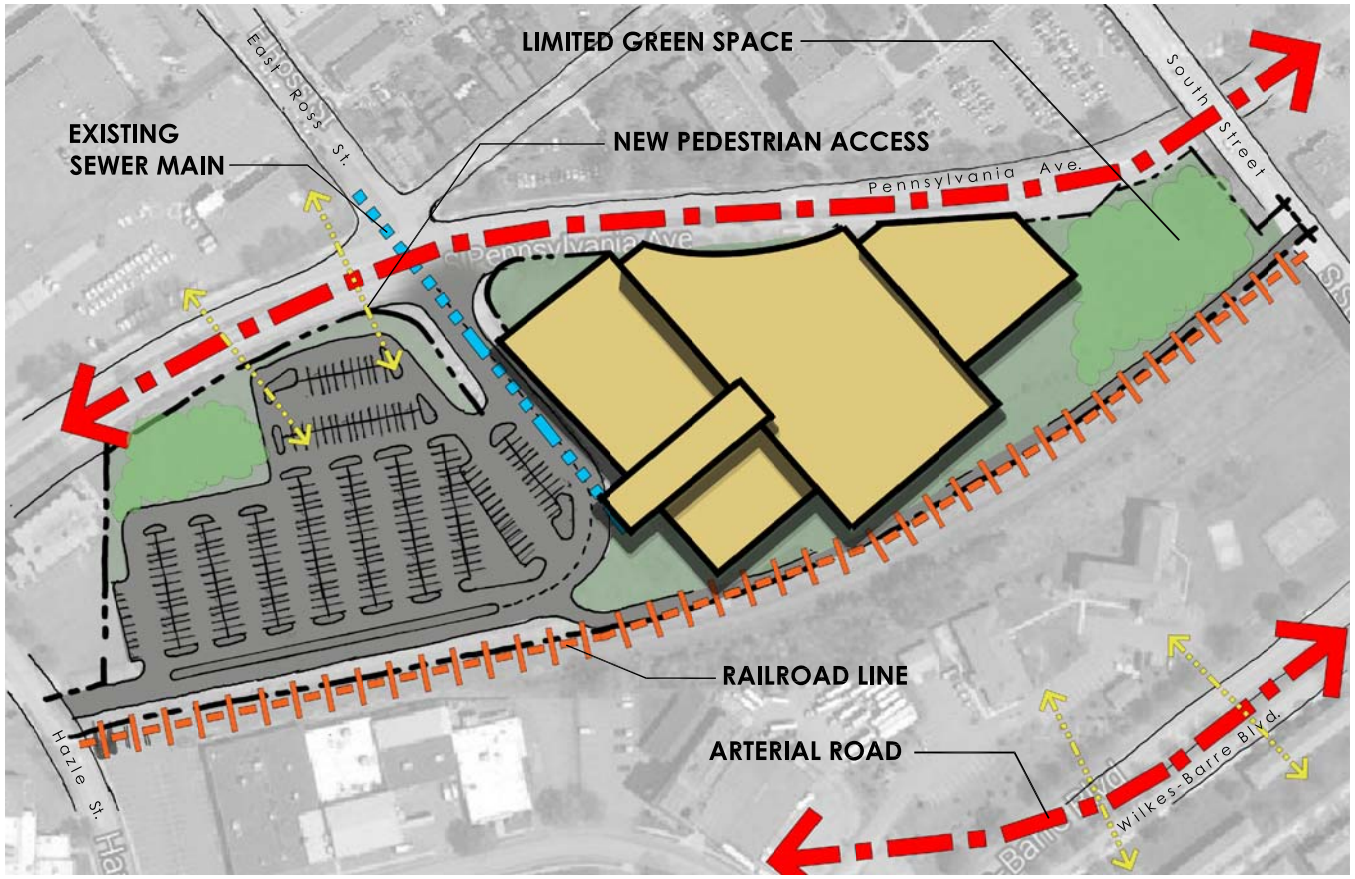
- Proposed Site Plan:
    - The proposed development plan divides the site into two zones with the south half comprising the vehicular areas and the north the building and outdoor activity areas.
    - Vehicular areas include: school bus drop-off/pick-up area, automobile drop-off/pick-up area, staff and visitor parking and student parking. School bus circulation is counter clockwise along the main drive entering off of Hazle Street to a discharge/pick-up area at the front of the new building. School buses exit the site on to Pennsylvania Avenue at the intersection of Pennsylvania Avenue and East Ross Street. The automobile areas are separated from the bus areas to minimize conflicts. Approximately 350 parking spaces are provided on site for daily use and special events.
    - The proposed high school building is situated on the northern half of the site with the main entrance facing south towards the entrance drive, bus areas and parking lots. A large plaza at the entrance accommodates students during the day and provides gathering and queuing space during special events. The building shape conforms to the irregular site configuration and is surrounded with lawn and landscaped areas.
    - The building occupies approximately 4.4 acres and the paved vehicular areas about 5.5 acres leaving 2.6 acres for site amenities, lawn and landscaping.

MURRAY / SINIAWA PARCEL - ADVANTAGES

- Accomodates 1,200 students & related parking.
- Accessible from major city arteries.
- Convenient location for both G.A.R and Meyers High Schools.
- Utilities readily available.
- Flat site & significant impervious areas.
- Educational opportunities; adjacent to downtown higher education providers. (< 1mile)

MURRAY / SINIAWA PARCEL - DISADVANTAGES

- Limited student capacity without additional costs/ limited site area. (11.49 Acres)
- Land acquisition costs are unknown.
- Minimal parking - little area for future expansion & no available area for sports complex.
- Difficult to accomodate vehicular/bus circulation.
- Demolition of existing structures & relocation of sanitary sewer mains.
- Storm water infiltration and detention areas limited/ storm water culvert traverses site.
- Adjacent to railroad line & 2 major thoroughfares - likely to require construction of multiple pedestrian bridges.
- Located in flood plain & protected by levee system.



Empire Street Parcel

WILKES-BARRE TOWNSHIP, PA

SITE ACREAGE: 37.34 acres

SITE CONDITIONS:

- General Description:
  - The Empire Street Parcel Site is located in Wilkes-Barre Township along the boundary between Wilkes-Barre Township and The City of Wilkes-Barre. The parcel has an area of approximately 37 1/3 acres and abuts the easterly side of Empire Street between Moyallen Street and South Street.
  - The surface of the site was previously disturbed by mining activities and was utilized as a mine spoil dump by nearby collieries. Railroad tracks that served the mines still are present on site. The area was also deep mined and reportedly shafts are present immediately to the north and to the south of the parcel; however no reported mine openings are located on the parcel itself.
  - The site is generally flat to gently sloping with brush and scrub tree cover growing in mine spoil material. Miscellaneous debris has been dumped throughout the site including concrete and demolition materials.
  - A drainage course, Spring Run, cuts through the site from east to west and is diverted into a concrete channel as it reaches Empire Street. In addition to Spring Run storm culverts from underground storm systems north of the parcel discharge into the concrete channel. The open channel runs westerly along Empire Street about 1,200 feet and enters underground storm drainage culverts south of the school parcel.
  - A flood plain affecting 60% of the parcel is identified on the Luzerne County Flood Insurance Rate Map as Zone A which is determined to have a 1% annual chance of flooding in any given year.
  - The site is Zoned M-3 Heavy Industrial as established in the Wilkes-Barre Township Zoning Ordinance. School Use (K-12) is not a permitted use in the M-3 zoning district and must be approved by the Wilkes-Barre Township Zoning Hearing Board by variance or zoning district redefinition.

- Vehicular Access:
  - Access to the parcel is directly off of Empire Street, a two lane residential street approximately 30 feet in width. The easterly edge of the parcel borders the Empire Street right of way for a distance of approximately 1,950 feet. However a concrete drainage channel running parallel to Empire Street along the parcel for 1,130 feet prevents direct on grade access to the southerly 60% of the site. Bridges spanning this channel would be required for additional access points in this area.

- Pedestrian Access:
  - Pedestrian access to the site is from the existing residential street network to the west of the parcel. Direct access from Empire Street is restricted to the Northerly 1/3 of the parcel's street frontage due to the obstruction created by concrete storm channel. Access from the east and south is restricted by industrial development.

- Utilities:
  - Utility services such as gas, water, electric, tele-communications and storm are available from the nearby streets.
  - A sanitary sewer main is located in Empire Street.

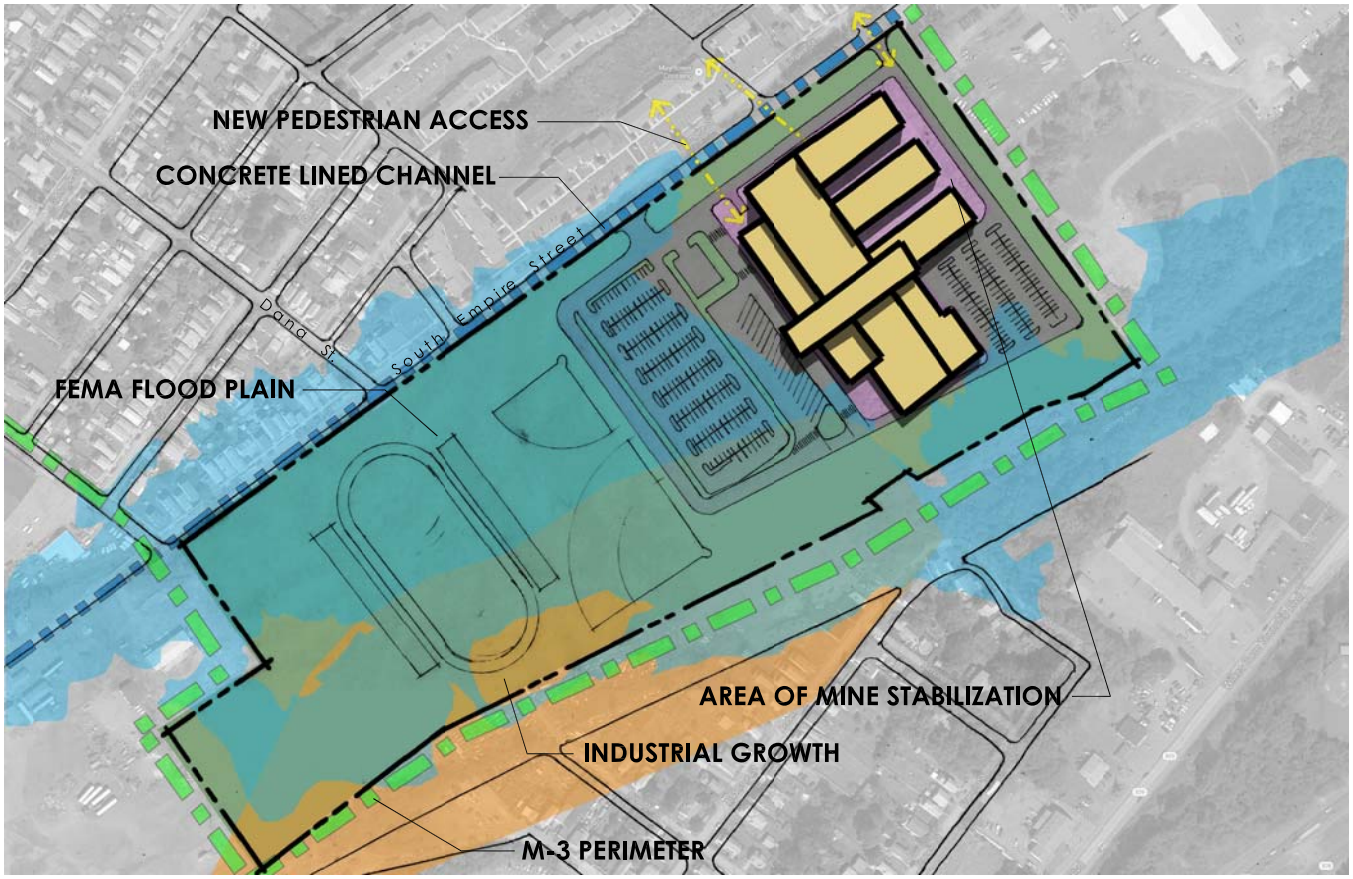
- Proposed Site Plan:
  - The proposed high school site design divides the site into two zones. The school building and related site improvements are clustered at the north end of the parcel with the building generally outside of the flood plain with only the south end of the parking lot potentially subject to flooding. The remainder of the site is lawn area capable of accommodating a variety of field sports that could withstand flooding with little adverse impact.
  - Access to the site is directly off Empire Street via two driveways. The parking lot arrangement separates the bus area from vehicular drop-off/pick-up traffic and from staff and student parking areas. Buses dropoff directly on to walks at the main building entrance away from traffic flows. Approximately 348 parking spaces are provided for visitor, staff and student parking. A large plaza at the entrance accommodates students during the day and provides gathering and queuing space during special events.
  - The primary development area at the north end of the parcel includes the building, vehicular areas, surrounding lawn and landscaped areas occupies 53% (19.7 acres) of the total site area (37.34 acres). The building covers 4.2 acres, roads and parking 7.2 acres with the remainder lawns and landscaping. To create a building pad area sufficient to accommodate the building and related improvements approximately 720 feet of the Spring Run channel crossing the site must be enclosed in a box culvert to enable the construction of the main vehicular parking areas across the stream channel, or otherwise diverted around the parking areas through a redirected open channel.
  - Site storm drainage will be managed with detention and infiltration facilities incorporating best management practices. Storm flows will be directed to existing drainage systems and into Spring Run.

EMPIRE STREET PARCEL - ADVANTAGES

- Property is owned by the school district.
- Large enough to accommodate school building, parking and athletic facilities. (37.34 Acres)
- Central location to Heights and the Georgetown sections of Wilkes-Barre Township.
- Existing grades are gentle.
- Readily available utilities.
- Adjacent city streets.

EMPIRE STREET PARCEL - DISADVANTAGES

- Property is located outside of Coughlin service area close to GAR High School.
- Access into the site is across an existing concrete lined drainage channel - Limited vehicular/pedestrian accessibility.
- Approximately 2/3 of the site is in a FEMA flood plain for Spring Creek.
- The property is located within an M-3 heavy Industrial District surrounded on 3 sides with industrial uses. Adjacent future industrial uses may be even less compatible with a high school land use.
- Located in a former mining area with nearbyshafts.
- Uncertain environmental, geotechnical, and soils issuesdue to past mining.



Coughlin Parcel

Wilkes-Barre City, PA

SITE ACREAGE: 2.364 acres (w/ property acquisitions)

SITE CONDITIONS:

- General Description:
  - Coughlin High School is located in downtown Wilkes-Barre within the historic commercial center of the city. The existing school is located along North Washington Street, in the first block off of East Market Street between East Union Street and Butler Lane. The school occupies land on both the west and east sides of North Washington Street with the west side comprising approximately 2.4 acres accommodating the school building, walks, court yards, service drives, parking and a 8/10 acre lawn outdoor open space used for physical education and activities. The parcel on the east side is ½ acre spanning the width of the block between North Washington Street and State Street, is completely asphalt paved and used as a staff parking lot. The overall area is generally flat with the building's first floor elevation established a few feet above the adjacent grades along North Washington Street.
  - The topography of the site is generally flat.
  - The site falls within a C-3, Central Commercial District in Wilkes-Barre City where School Use is not a permitted use. While the property is currently under a school use, a Special Exception will likely be required from the zoning hearing board to allow the construct of a new School Use in the C-3 District.
  - The property is protected from flooding by the Wilkes-Barre levee system managed by the Luzerne County Flood Protection Authority. The site is in an area identified as "Other Flood Areas" on the Luzerne County Flood Insurance Rate Map and is noted as being protected from "the 1% annual chance or greater flood hazard by a levee system that has been provisionally accredited.".

- Vehicular Access:
  - Vehicular access to the proposed High School will be from East Union Street to the north and South Washington Street from the east. An existing parking lot at the southwest corner of East Union and North Washington Street can be expanded through property purchase to increase the availability of parking on the site.

- Pedestrian Access:
  - The center city of Wilkes-Barre has a highly developed urban sidewalk network extending throughout the city. The Coughlin Site is within walking

distance of significant portions of the north end of Wilkes-Barre and the center city area.

- Utilities:
  - Utility services such as gas, water, electric, tele-communications and storm are available from the nearby streets.
  - A sanitary sewer main is located near East Union Street and South Washington Street.

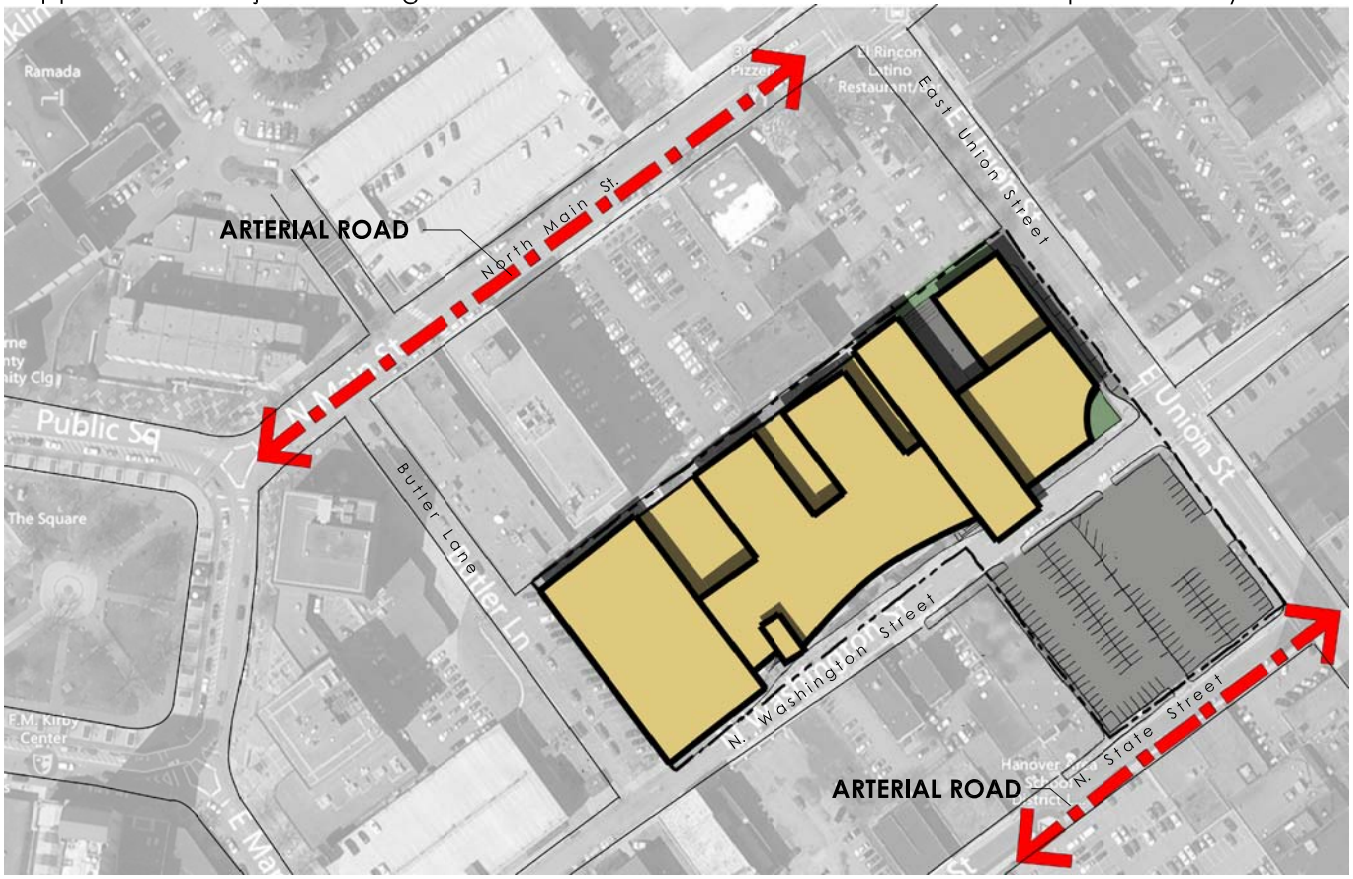
- Proposed Site Plan:
  - The proposed site plan positions the new high school building in the in the same general area as the existing high school, but extends the building to East Union Street, eliminating the existing athletic field in this location. The plan show the expansion of the existing parking area on the southwest corner of East Union and North Washington Street, through property acquisition of an adjacent 0.6 acre parcel, and the addition of new parking along East Union Street from acquisition of an additional 0.3 acres of property . A new athletic field would also be located near the intersection of East Union Street and North Main Street through the acquisition of an additional 0.6 acres of property. The total site, with additional property acquisitions, would be approximately 4.5 acres. The project construction roughly covers the entire parcel. The building accounts for 2.5 acres, parking and roads 1.4 acres with the remaining approximate 0.6 acres comprised of lawns, landscaped areas, embankments and outdoor activity areas.
  - With the addition of the expanded parking lot the bus area can be separated from vehicular drop-off/pick-up traffic and from staff and student parking areas.
  - The proposed athletic field at the corner of East Union and North Markets Street would be available for athletic practice, but would not be sufficient for a construction of a high school stadium.
  - Site storm drainage will be managed with detention and infiltration facilities incorporating best management practices. Storm flows discharged from these facilities will be directed to existing storm drainage systems in the adjacent city streets.

COUGHLIN PARCEL - ADVANTAGES

- Accomodates 1,200 student capacity school
- Property is owned by the school district.
- Readily available utilities & additional onsite parking.
- Existing site with no changes to bus routes, walking distances, ect.
- Flat & impervious site.
- Opportunity to reduce/eliminate building elements due to available amenities. (e.g. F.M. Kirby Center, King's College, etc.)
- Maintains historical use pattern, high school presence in the downtown, & existing bus/traffic patterns.
- Enhanced education opportunities - adjacent to higher education providers. (< 1mile)

COUGHLIN PARCEL - DISADVANTAGES

- Limited 1,200 student capacity/ land acquisition cost & parking area to be acquired.
- Vehicular/bus circulation difficult to accomodate.
- Loss of P.E. field; cost of reconstruction for new athletic field/track required on adjacent property.
- Lack of space for expansion. (2.364 Acres)
- Demolition Cost ($2,000,000 +/-). Requires demolition and phasing plans to accomodate existing students - impacting educational; environment and programming.
- Located in Flood Plain but protected by W-B Levee System.



Meyers Parcel
Wilkes-Barre City, PA

SITE ACREAGE: 7.731 acres (w/o property acquisitions)

SITE CONDITIONS:

- General Description:
  - The Meyers High School site is located along Carey Avenue and Hanover Streets in the heart of residential south Wilkes-Barre. The site is generally flat, irregularly shaped, but depressed a full story below adjacent grades. The depression includes the existing building's basement, covered parking and the WB Memorial Stadium/Track. The parcel is approximately 7 ¾ acres.
  - The site is in a residential zoning district with the school being a long-standing approved or conditionally-approved use.
  - The property is protected from flooding by the Wilkes-Barre levee system managed by the Luzerne County Flood Protection Authority.

- Vehicular Access
  - The south-eastern property boundary is adjacent to Carey Avenue, a PennDOT commercial street with one lane in each direction, and left turn lanes; access from Carey Ave. is good. The Carey Ave./Hanover Street intersection is an unusual five street intersection with flashing traffic signals. Hanover Street, to the south, is a minor, one-way street with good access to the site. To the west is Old River Road, another two-lane, two-way street with good vehicular access to and into the site with ample space for bus turning and maneuvering. Primary ingress and egress to a new site configuration could be from either/both Carey Ave./Old River Road. New ingress/egress from Carey Ave. would require a highway occupancy permit. Ingress/egress from the other streets will require City driveway permits.

- Pedestrian Access
  - South Wilkes-Barre has a highly developed urban sidewalk network extending throughout the area. The Meyers site is within walking distance of nearly the entire enrollment area for the current school.

- Utilities
  - Utility services such as gas, water, electric, telecommunications, storm and sanitary sewerage are available from the nearby streets.

- Proposed Site Plan
  - The proposed development plan maintains the school building along Carey Ave. and Hanover Streets. The new concept rotates the athletic

field/stadium 90 degrees (to an East-West orientation) from the current layout in order to provide for a PIAA approved track. An East-West interior road (at the North boundary) allows for access to the lower level, parking and field.

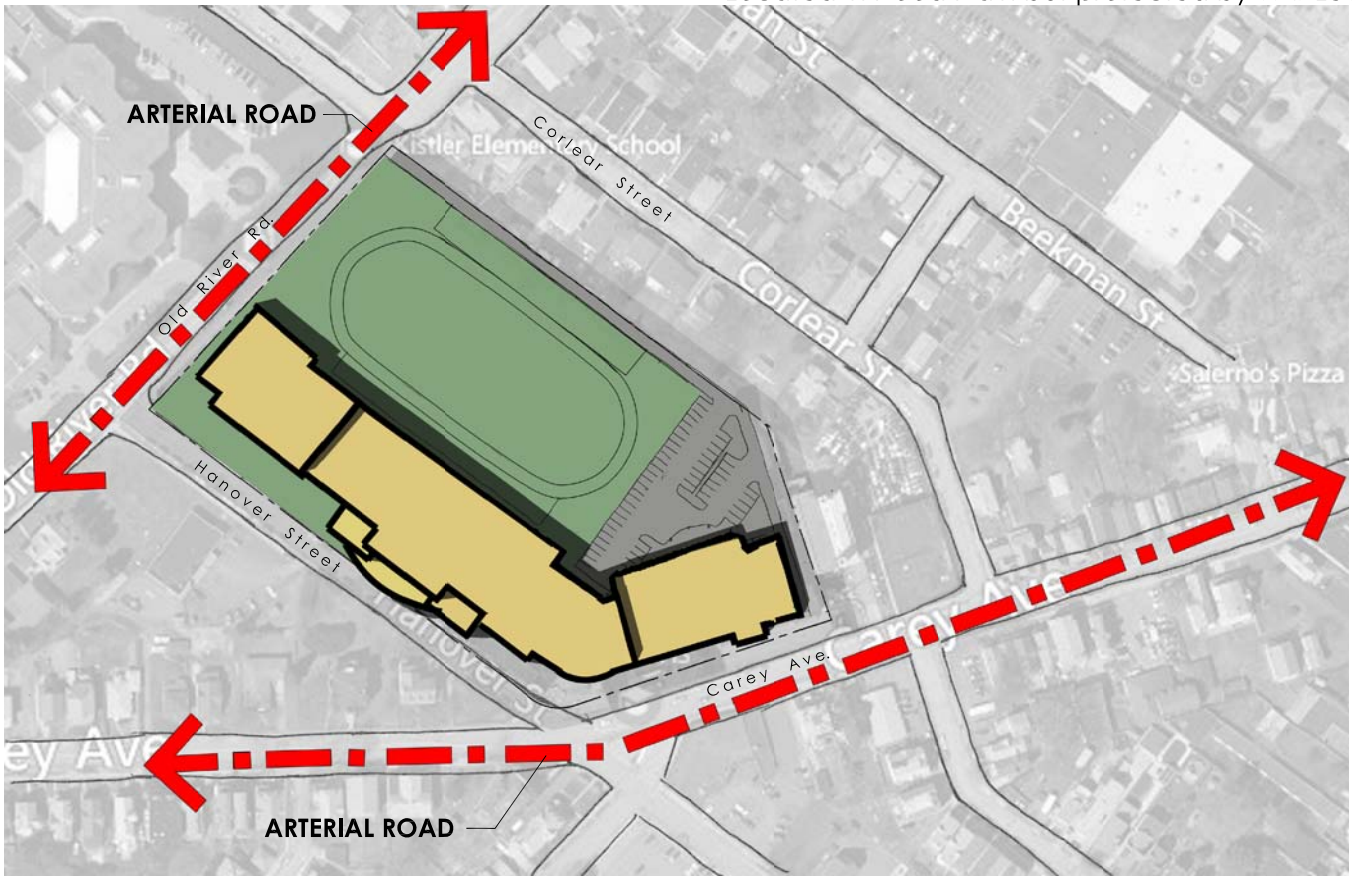
- Vehicular areas include: school bus drop-off/pick-up area along Hanover Street; automobile drop-off/pick-up area along Carey Avenue; staff and visitor parking and student parking at the Southwest corner of the site and at the lower level. The automobile areas are separated from the bus areas to minimize conflicts.
- The proposed high school building is situated on the eastern portion of the site with the main entrance facing south at the Carey/Hanover intersection. A large plaza at the entrance – and along both streets - accommodates students during the day and provides gathering and queuing space during special events. The building shape conforms to the irregular site configuration and is surrounded with lawn and landscaped areas.

MEYERS PARCEL - ADVANTAGES

- Property is owned by the school district.
- Readily available utilities & access to adjacent road network.
- Existing grades are gentle & site is impervious.
- Maintains historical use pattern & high school presence in the downtown and improves existing bus/traffic patterns & parking.
- Opportunity to reduce/eliminate building elements due to available amenities. (e.g. F.M. Kirby Center, King's College, etc.)
- Enhanced education opportunities - adjacent to higher education providers. (< 1mile)

MEYERS PARCEL - DISADVANTAGES

- Limited capacity without additional costs (land acquisition costs) & limited space for expansion. (7.731 Acres)
-Loss of existing Wilkes-Barre Memorial Stadium and the replacement of athletic fields on-site or at another location. (e.g. Empire Street)
- Additional parking would need to be acquired.
- Vehicular/bus circulation: difficult to accomodate.
- Demolition Cost ($3,000,000 +/-). Requires demolition and phasing plans - impacting educational environment and programming.
- Uncertain geotechnical and soils issues.
- Located in Flood Plain but protected by W-B Levee System.



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ENGINEERING | ARCHITECTURE

LEI ENGINEERS

WKL ARCHITECTURE

WILKES-BARRE AREA SCHOOL DISTRICT

E.L. MEYERS PARCEL (1100 STUDENTS) - CONCEPTUAL PLAN & ANALYSIS

DECEMBER 8, 2014

SITE ADVANTAGES & DISADVANTAGES

Our Team has identified advantages and disadvantages applicable to a specific site. Advantages and disadvantages are based on informal discussions our Team conducted with District personnel, members of the administration, and members of the District Board. In general, the following factors were considered when evaluating site.

A. Zoning, land development and other permit/project approval requirements and regulations that may constrain the project design
B. Parking, open space, and buffer requirements/constraints
C. Utility (e.g., water, sewer, electric) service connections
D. Scope of rough grading
E. Ability of the site to accommodate stormwater
F. Location of the site within a recognized FEMA floodplain
G. Accessibility to pedestrians and students who walk to school
H. Accessibility to busing and other vehicular traffic
I. Potential traffic and site access issues
J. Potential environmental hazards
K. Potential geotechnical or soil issues
L. Location within the District and surrounding community
M. Ability of the site to be used to develop a school that can meet or exceed contemporary educational standards
N. Ability of the site to accommodate future growth
O. Ability of the site to leverage surrounding uses to enhance the educational program.

The value of advantages and disadvantages are not equal, but is subjective and based on past personal experiences. As such, each advantage and disadvantage should be viewed as a point of discussion in forming a balanced consensus of which site is best suited to deliver the District's educational program within financial constraints.

SOLOMON/PLAINS PARCEL

Construction of a new school adjacent to existing schools in an area of the existing field and sports complex. Site is located in the Township of Plains and spans its border with the City of Wilkes-Barre.

Site Advantages

- Accommodates 1,200 -1,300 student capacity school
- Property is owned by the District
- Centrally located for students residing in Laflin, Plains, and the Miners Mills and North End sections of Wilkes-Barre
- Accommodates minimal parking
- Utilities are readily available
- Access to/from adjacent road network
- Gentle slopes
- Cleared site
- Out of flood plain
- Provides an opportunity for educational and site synergies with adjacent elementary and junior high facility

Site Disadvantages

- Limited to 1,200 -1,300 student capacity school without significant additional costs
- Development would encompass existing fields and sports complex and require the reconstruction of fields and sports complex on another site
- Parking areas would leave little area for expansion
- Vehicle and bus circulation patterns would be difficult to accommodate
- Traffic on adjacent residential road network would be significantly increased in daily trips generated by faculty, staff, deliveries, parents, and students
- Adjacent to active rail line
- Uncertain geotechnical and soils issues due to past mining

BISCONTINI PARCEL

Construction of a new school in the area of an existing warehouse/distribution center and railroad siding. Site is accessed by South Main Street and is located in both the Township of Plains and the City of Wilkes-Barre.

Site Advantages

- Accommodates 1,200 – 2,600 student capacity school and related parking
- Centrally located for students residing in Laflin, Plains, and the Miners Mills and North End sections of Wilkes-Barre
- Utilities are readily available
- Access to/from adjacent road network
- Gentle slopes
- Cleared site
- Significant impervious areas
- Out of flood plain
- Provides opportunities for the shared use of adjacent parking areas, fields and sports complex
- Provides an opportunity for educational and site synergies with adjacent elementary and junior high facility

Site Disadvantages

- Acquisition costs are unknown
- Development would disrupt and require the relocation of an existing business
- Existing pedestrian walkways unavailable to students from the North End section of Wilkes-Barre
- Adjacent to active rail line
- Uncertain geotechnical and soils issues due to past mining

PAGNOTTI PARCEL

Construction of a new school in a former mining area. Site is located in the Township of Plains and bounded by South Main Street, Maffet Street, and the Cross Valley Expressway.

Site Advantages

- Accommodates 1,200 – 2,600 student capacity school and related parking
- Accommodates future expansion including areas for elementary or junior high educational facilities
- Accommodates athletic fields and sports complex
- Centrally located for students residing in Laflin, Plains, the Miners Mills section of Wilkes-Barre, and the North End section of Wilkes-Barre
- Access to/from adjacent road network
- Out of flood plain

Site Disadvantages

- Acquisition costs are unknown
- Students may find the site isolated and difficult to walk to from the Miners Mills section of Wilkes-Barre
- Existing pedestrian walkways unavailable to students from the North End section of Wilkes-Barre
- Uncertain geotechnical and soils issues due to past mining

MURRAY COMPLEX/SINIAWA PARCEL

Construction of a new school fronting on South Pennsylvania Boulevard in the City of Wilkes-Barre.

Site Advantages

- Accommodates 1,200 -1,300 student capacity school and related parking
- Centrally located between Coughlin, Meyers, and G.A.R.
- Utilities are readily available
- Access to/from major arterial road network
- Flat site
- Significant impervious areas
- Provides an opportunity for enhanced educational opportunities with adjacent downtown higher education providers (< 1mile)

Site Disadvantages

- Limited to 1,200 -1,300 student capacity school without significant additional costs
- Land acquisition costs are unknown
- Parking areas would be minimal and leave little area for future expansion
- Vehicle and bus circulation patterns would be difficult to accommodate
- No areas available for athletic fields or sports complex
- Storm water infiltration and detention areas limited
- Storm water culvert traverses site
- Sanitary sewer line traversing site must be relocated
- Demolition of existing structures required
- Limited space for future expansion
- Adjacent to active rail line
- Adjacent to two major thoroughfares (Hazle Street and Pennsylvania Blvd.) and would likely require the construction of multiple pedestrian bridges to minimize student access difficulties
- Students and surrounding neighborhood may find the site isolated and difficult to access by walking
- Located in flood plain and protected by levee system

EMPIRE STREET PARCEL

Construction of a new school on existing school district property and fronting on South Empire Street in the City of Wilkes-Barre.

Site Advantages

- Accommodates 1,200 – 2,500 student capacity school and related parking
- Property is owned by the District
- Accommodates athletic fields
- Centrally located for students residing in the Heights section of Wilkes-Barre and the Georgetown section of Wilkes-Barre Township
- Utilities are readily available
- Access to/from adjacent road network

Site Disadvantages

- Located in a M-3 Heavy Industrial District and is bounded on three sides by industrial uses
- Vehicular and pedestrian accessibility is limited due to a significant drainage channel traversing site
- Students and surrounding neighborhood may find the site isolated due to adjacent uses and channel
- Located in flood plain
- Uncertain environmental issues
- Uncertain geotechnical and soils issues due to past mining

COUGHLIN PARCEL

Construction of a new school at the existing Sr. High School site and adjacent properties.

Site Advantages

- Accommodates 1,200 -1,300 student capacity school
- Property is owned by the District
- Maintains historical use pattern
- Maintains high school presence in downtown Wilkes-Barre
- Maintains existing bussing and traffic patterns
- Utilities are readily available
- Access to adjacent road network
- Flat site
- Impervious site
- Provides an opportunity to reduce or eliminate building elements due to amenities immediately available at downtown facilities (e.g. F.M. Kirby Center, King's College, etc.)
- Provides an opportunity for enhanced educational opportunities with adjacent downtown higher education providers (< 1mile)

Site Disadvantages

- Limited to 1,200 -1,300 student capacity school without significant additional costs
- Land acquisition costs of adjacent properties are unknown
- Parking areas would need to acquired
- Vehicle and bus circulation patterns would be difficult to accommodate without using public streets
- Development would require a demolition and phasing plan to accommodate existing students
- Educational environment and programming would be adversely impacted due to phased demolition and construction
- Loss of existing physical education field and cost of reconstruction on an adjacent property
- No space for future expansion
- Located in flood plain and protected by levee system

MEYERS PARCEL

Construction of a new school at the existing Jr./Sr. High School site and the adjacent properties.

Site Advantages

- Accommodates 1,200 -1,300 student capacity school
- Property is owned by the District
- Maintains historical use pattern
- Maintains high school presence in South Wilkes-Barre
- Improves existing bussing and traffic patterns
- Improves existing parking
- Accommodates athletic field
- Utilities are readily available
- Access to adjacent road network
- Flat site
- Impervious site
- Provides an opportunity to reduce or eliminate building elements due to amenities immediately available at adjacent elementary school (e.g. natatorium)
- Provides an opportunity for enhanced educational opportunities with adjacent downtown higher education providers (< 1mile)

Site Disadvantages

- Limited to 1,200 -1,300 student capacity school without significant additional costs or loss of athletic field
- Land acquisition costs of adjacent properties are unknown
- Additional parking areas would need to be acquired
- Vehicle and bus circulation patterns would be difficult to accommodate without using public streets
- Development would require a demolition and phasing plan to accommodate existing students
- Educational environment and programming would be adversely impacted due to phased demolition and construction
- Loss of existing Wilkes-Barre Memorial Stadium and the replacement of athletic fields on-site or at another location (e.g. Empire Street)
- Limited space for future expansion
- Uncertain geotechnical and soils issues
- Located in flood plain and protected by levee system

Construction Options

SUMMARY

DISTRICT-WIDE OPTIONS:

The following options were developed.

Option 1: Renovation of Existing Schools per Code
Option 2: Two New High Schools at Two New Sites
Option 3: One Consolidated High School at a New Site
Option 4: Two New Neighborhood High Schools at Existing Sites
Option 5: Retain the Three Secondary School Model at Existing Sites

Option 1 addresses the conceptual project costs necessary to renovate and modernize each District facility to current codes and standards (where feasible). Options 2-5 focus on alternative solutions to address educational and facility deficiencies at James M. Coughlin Sr. High School, Elmer L. Meyers Jr./Sr. High School, and G.A.R. Jr./Sr. High School.

Because Option 1 is the only option that specifically addresses all facilities, the reader should refer to Option 1 for facilities that are not specifically addressed in Options 2-5, e.g. the elementary centers and the Solomon-Plains Junior High School.

PROJECT PHASING:

The District may choose to phase projects over time. For example, the District is considering opening the Edward Mackin School as a temporary High School for students who would traditionally attend Coughlin in Grades 9-10. The District could authorize the Mackin project to proceed as part of a PlanCon submission while reserving the decision as to renovate or replace Coughlin for a later date.

In such a case, the planning documents would be prepared based on the educational alignment after taking into account the proposed change. Thus, a Mackin PlanCon submission would be based on the students who attend Coughlin in Grades 9-10 attending Mackin.

STUDY AMENDMENTS & REVISIONS:

The Study is a tool to address the future direction of the District and should be reviewed and modified when necessary to address the District's facility needs, educational programming, and goals. As with the Study as a whole, options can be replaced or amended within two years without the Department of Education requiring a new study for a PlanCon reimbursable project.

OPTION COSTS, ADVANTAGES & DISADVANTAGES:

A summary of each option is listed on the following pages. The summary includes conceptual costs and a list of advantages and disadvantages our Team believes are applicable to a specific option. Advantages and disadvantages are based on informal discussions our Team conducted with District personnel, members of the administration,

and members of the District Board. In general, the following factors were considered when evaluating options.

A. Compatibility with current curriculum, instructional practices and the District's educational objectives
B. Opportunities for diverse educational programs
C. Opportunities for enhanced student attention
D. Impact on the surrounding neighborhood, community, and District as a whole
E. Opportunities for strategic partnering with neighboring uses and educational providers
F. Ability to accommodate enrollment growth
G. Consistency with the District's historical educational alignment
H. Ease and ability of meeting or exceeding contemporary educational facility standards
I. Ability to meet most recent code and energy efficiency standards (e.g., HVAC, electrical, mechanical)
J. Quantifiable cost from an order of magnitude perspective
K. Impact on educational environment
L. Traditional architectural and planning practices

The value of advantages and disadvantages are not equal, but is subjective and based on past personal experiences. As such, each advantage and disadvantage should be viewed as a point of discussion in forming a balanced consensus of which option is best suited to deliver the District's educational program within financial constraints.

COSTS:

The costs on the following pages are conceptual estimates in 2014-15 dollars and are for conceptual planning purposes only. The costs should be viewed from an order of magnitude stand point.

Costs are based on a typical educational program, a rational and efficient design, a traditional foundation system, and historical square foot cost data. Once the District authorizes a specific project, the cost would be refined and an estimate established with the construction manager.

The cost will change based on market conditions at the time the project is designed and bid, the scope of work, the educational program, the project and construction time frame, funding opportunities, site constraints, geotechnical and environmental issues, and the rationality of the building layout.

Estimated soft costs are included. Soft costs address architectural and engineering design fees, construction management fees, traffic studies, geotechnical investigation fees, legal fees, financing costs, and contingencies.

Property acquisition costs are outside the scope of the study. Costs associated with site issues related to subsurface mining (e.g., mine shafts, etc.) and environmental abatement of contaminated soil is not included.

Ancillary costs are not included. These costs include, for example, costs related to transportation (busing), faculty (administration and teaching staff), food service, custodial services, security services, and utilities.

Option 1: Renovation of Existing Schools per Code

SUMMARY OF WORK & PROPOSED ALIGNMENT:

Improvements to address code, structural, accessibility, and system deficiencies in order to bring facilities (at present use) to current codes and standards, where feasible.

A.	James M. Coughlin Sr. High School:	$ 83,200,000
B.	Elmer L. Meyers Jr. / Sr. High School:	$113, 500,000
C.	G.A.R. Jr. / Sr. High School:	$ 39,000,000
D.	Solomon – Plains Elementary and Jr. High School:	$ 4,300,000
E.	Daniel J. Flood Elementary School:	$ 12,700,000
F.	Boyd Dodson Elementary School:	$ 8,800,000
G.	Dr. David W. Kistler Elementary School:	$ 25,000,000
H.	Heights - Murray Elementary School:	$ 17,300,000
I.	Edward Mackin Elementary School:	$ 9,242,000
J.	District Administration Building (Office):	$ 4,540,000
K.	Wilkes-Barre Township Maintenance Building (Storage):	$ 4,300,000
L.	Former Plains Jr. High:	$ 11,316,000

Advantages:

- Maintains neighborhood school concept
- Maintains community involvement based on the District's historical alignment
- Maintains historical transportation costs
- Maintains traditional pedestrian patterns

Disadvantages:

- Fails to address anticipated enrollment growth or future expansion
- Higher risk that construction costs could escalate upon the discovery of unforeseen conditions with existing facilities
- Maintains inadequately sized spaces, including inadequately sized classrooms, labs, multi-purpose rooms, libraries, cafeterias, kitchen production and serving areas, toilet rooms, and gymnasiums
- Continues the undesirable use of shared and undersized space for administrative staff
- Continues the undesirable use of shared and undersized educational spaces for music, art, health, speech and vision, emotional support, and life skills
- Fails to provide an adequate number of meeting rooms for tutoring and smaller class size instruction (speech and remedial programs, psychological testing, etc.)
- Continues the undesirable use of shared space for private guidance counseling and nurse/wellness interviews with students
- Fails to provide the District opportunities to secure operational economies by eliminating the duplication of services
- Continues the undesirable practice of having staff travel between school facilities on a daily basis
- Fails to provide shared and teaming facilities that may enhance educational programming initiatives amongst teachers and departments
- Renovation and improvement projects would be a multi-semester and multi-year construction project and would significantly impact the educational environment
- The bulk of the District's facilities, excluding Plains/Solomon, remain, generally, outdated and functionally obsolete
- Provides the least amount of state reimbursement
- Expends significant funding on facilities and systems with the shortest remaining useful life

Option 2: Two New High Schools at Two New Sites

SUMMARY OF WORK & PROPOSED ALIGNMENT:

A. New North Sr. High School – Construction of a New High School serving 1,200 - 1,300 students in Grades 9-12, encompassing approximately 245,000 SF, and located to serve students from the Plains, Laflin, North End and East End sections of Wilkes-Barre, Bear Creek, and Buck Township areas. The North High School would serve students who would traditionally be enrolled at James M. Coughlin Sr. High School.

   A demolition budget to address Coughlin is included in the cost for each site. Property acquisition is an additional cost.

   1. Biscontini Property: $72,077,500
   2. Pagnotti Property: $75,652,500
   3. Solomon/Plains Property: $69,217,500

B. New Central Sr. High School – Construction of a New High School serving 1,200 - 1,300 students in Grades 9-12, encompassing approximately 245,000 SF, and located to serve students from the Heights, Central and South Wilkes-Barre area. The Central High School would serve students who would traditionally be enrolled in Grades 9-12 at G.A.R. Jr./Sr. High School and Elmer L. Meyers Junior/Senior High School.

   A demolition budget to address Meyers is included in the cost for each site. Property acquisition is an additional cost.

   1. Siniawa Property: $73,810,500
   2. Empire Street Property: $71,307,500

C. New Middle or Junior High School at G.A.R. – Renovation and improvements to the existing G.A.R. Jr./Sr. High School to establish a consolidated Middle School serving 825 – 875 students in Grades 6-8 and who would traditionally be enrolled in Grades 7-8 at G.A.R. Jr./Sr. High School and Elmer L. Meyers Jr./Sr. High School, and Grade 6 of the G.A.R. and Meyers feeder schools. Alternately, a Junior High could be established.

   1. New Middle School at G.A.R. $39,000,000

D. New Short-Term Temporary High School for Grades 9-10 and Long-Term Permanent Elementary – Renovation and improvements to the Edward Mackin Elementary School to establish a temporary High School serving 450-500 students in Grades 9-10 who would traditionally be enrolled in Grades 9-10 of the existing Coughlin Sr. High School. Temporary closure of the Coughlin Sr. High School Main Building.

   1. Edward Mackin School $9,242,200

Advantages

- Provides two equally sized schools capable of providing similar programs and opportunities to all students
- Minimizes inequities in educational offerings
- Minimizes inequities created due to differently sized facilities and educational programs
- Replaces the existing Coughlin and Meyers schools, both of which fail to provide facilities satisfying contemporary educational standards
- Provides New High Schools and a New Renovated Middle School (or Junior High) meeting modern energy efficiency, architectural, space, day-lighting, air quality, and contemporary educational facility standards
- Could provide additional space at the elementary school level by moving Grade 6 from the G.A.R. and Meyers feeder schools to a new Middle School
- Provides additional office space and conference areas for faculty and administrative staff at both the elementary and secondary center levels
- Addresses existing secondary center room size and technological deficiencies
- Minimizes the use of shared and undersized educational spaces and provides dedicated facilities for music, art, health, speech and vision, emotional support, life skills and autistic programs
- Provides meeting rooms for tutoring and small group instruction
- Provides private meeting rooms for guidance counseling and nurse/wellness interviews with students
- Provides the District an opportunity to secure operational economies by eliminating the duplication of staff services
- Minimizes staff travel time between schools
- Provides increased opportunities for educational programming initiatives and teaming activities amongst teachers and departments
- Re-establishes neighborhood elementary school in the East End section of Wilkes-Barre

Disadvantages

- Converts the G.A.R. Jr/Sr. High School to a new Middle School or Junior High
- Reduces the existing neighborhood secondary school concept to a regional concept
- During construction renovation work at the New Middle School or Junior High, students would need to be temporarily relocated and/or the construction renovation work phased over two summer breaks. Students and staff may be inconvenienced and the educational programming negatively impacted. Minor construction work may also occur during the school year further impacting the educational environment
- Construction costs associated with the construction renovation work at the New Middle School or Junior High could escalate upon the discovery of unforeseen conditions
- Increases transportation costs as students who would traditionally walk to the closed secondary center would need to be bused to one of the new High Schools

Option 3: One Consolidated High School at a New Site

SUMMARY OF WORK & PROPOSED ALIGNMENT:

A. One New Consolidated High School – Construction of a New High School serving 2,500 - 2,600 students in Grades 9-12 and encompassing approximately 410,000 SF. The Consolidated High School would serve all District students in Grades 9-12.

   A demolition budget to address Coughlin and Meyers is included in the cost for each site. Property acquisition and demolition of site structures, if required, are additional costs.

   1. Consolidated High School at Biscontini Property: $113,740,000

   2. Consolidated High School at Empire Street Property: $112,970,000

   3. Consolidated High School at Pagnotti Property: $119,130,000

B. New Middle School or Junior High at G.A.R. – Renovation and Improvements to the existing G.A.R. Jr./Sr. High School to establish a consolidated Middle School serving 825 – 875 students in Grades 6-8 and who would traditionally be enrolled in Grades 7-8 at G.A.R. Jr./Sr. High School and Elmer L. Meyers Jr./Sr. High School, and Grade 6 of the G.A.R. and Meyers feeder schools. Alternately, a Junior High could be established.

   1. New Middle School at G.A.R. $39,000,000

C. New Short-Term Temporary High School for Grades 9-10 and Long-Term Permanent Elementary – Renovation and improvements to the Edward Mackin Elementary School to establish a temporary High School serving 450-500 students in Grades 9-10 who would traditionally be enrolled in Grades 9-10 of the existing Coughlin Sr. High School. Temporary closure of the Coughlin Sr. High School Main Building.

   1. Edward Mackin School $9,242,200

Advantages

- Provides equal educational opportunities to all students regardless of where the student resides within the school district
- Minimizes inequities created between differently sized facilities and educational programs
- Replaces the existing Coughlin and Meyers schools, both of which fail to provide facilities satisfying contemporary educational standards
- Provides a new High School and a New Renovated Middle School or Junior High meeting modern energy efficiency, architectural, space, day-lighting, air quality, and contemporary educational facility standards
- Could provide additional space at the elementary school level by moving Grade 6 from the G.A.R. and Meyers feeder schools to a new Middle School
- Provides additional office space and conference areas for faculty and administrative staff at both the elementary and secondary school levels
- Addresses existing secondary center room size and technological deficiencies
- Minimizes the use of shared and undersized educational spaces and provides dedicated facilities for music, art, health, speech and vision, emotional support, life skills and autistic programs
- Provides meeting rooms for tutoring and small group instruction
- Provides private meeting rooms for guidance counseling and nurse/wellness interviews with students.
- Provides the District an opportunity to secure operational economies by eliminating the duplication of staff services
- Eliminates staff travel time between schools
- Provides increased opportunities for educational programming initiatives and teaming activities amongst teachers and departments
- Re-establishes neighborhood elementary school in the East End section of Wilkes-Barre

Disadvantages

- Converts the G.A.R. Jr/Sr. High School to a new Middle School or Junior High
- Reduces the existing neighborhood secondary school concept to a District-Wide concept
- During construction renovation work at the New Middle School or Junior High, students would need to be temporarily relocated and/or the construction renovation work phased over two summer breaks. Students and staff may be inconvenienced and the educational programming negatively impacted. Minor construction work may also occur during the school year further impacting the educational environment
- Construction costs associated with the construction renovation work at the New Middle School or Junior High could escalate upon the discovery of unforeseen conditions
- Available property for a Consolidated High School is limited and would likely be expensive to obtain and develop
- Likely to increases transportation costs as students from the bulk of the District will need to be bused to the Consolidated High School

Option 4: Two New Neighborhood High Schools at Existing Sites

SUMMARY OF WORK & PROPOSED ALIGNMENT:

A. New North Sr. High School – Construction of a New High School serving 1,200 - 1,300 students in Grades 9-12 , encompassing approximately 245,000 SF, and located at the existing James M. Coughlin Sr. High School site and immediately adjacent areas. The New North High School would serve students who would traditionally be enrolled at Coughlin High School.

   A demolition budget to address Coughlin is included in the cost. Acquisition of adjacent properties and related demolition, if required, would be additional costs.

   1. New North Sr. High School $63,882,500

B. New Central Sr. High School – Construction of a New High School serving 1,200 - 1,300 students in Grades 9-12 , encompassing approximately 245,000 SF, and located at the existing Elmer L. Meyers Jr./Sr. High School site and immediately adjacent areas. The New Central High School would serve students who would traditionally be enrolled in Grades 9-12 at G.A.R. Jr./Sr. High School and Elmer L. Meyers Jr./Sr. High School.

   A demolition budget to address Meyers is included in the cost. Acquisition of adjacent properties and related demolition, if required, would be additional costs.

   1. New Central Sr. High School $66,247,500

C. New Middle School or Junior High at G.A.R. – Renovation and improvements to the existing G.A.R. Jr./Sr. High School to establish a consolidated Middle School serving 825 – 875 students in Grades 6-8 and who would traditionally be enrolled in Grades 7-8 of G.A.R. Jr./Sr. High School and Elmer L. Meyers Jr./Sr. High School, and Grade 6 of the G.A.R. and Meyers feeder schools. Alternately, a Junior High could be established.

   1. New Middle School at G.A.R. $39,000,000

D. New Short-Term Temporary High School for Grades 9-10 and Long-Term Permanent Elementary – Renovation and improvements to the Edward Mackin Elementary School to establish a temporary High School serving 450-500 students in Grades 9-10 who would traditionally be enrolled in Grades 9-10 of the existing Coughlin Sr. High School. Temporary closure of the Coughlin Sr. High School Main Building.

   1. Edward Mackin School $9,242,200

Advantages

- Reinforces historical use patterns
- Maintains neighborhood school presence in downtown Wilkes-Barre, the Heights section of Wilkes-Barre, and South Wilkes-Barre
- Maintains historical transportation and pedestrian patterns
- Provides two equally sized schools capable of providing similar programs and opportunities to all students
- Minimizes inequities in educational offerings
- Minimizes inequities created due to differently sized facilities and educational programs
- Replaces the existing Coughlin and Meyers schools, both of which fail to provide facilities satisfying contemporary educational standards
- Provides New High Schools and a New Renovated Middle School or Junior High meeting modern energy efficiency, architectural, space, day-lighting, air quality, and contemporary educational facility standards
- Could provide additional space at the elementary school level by moving Grade 6 from the G.A.R. and Meyers feeder schools to a new Middle School
- Provides additional office space and conference areas for faculty and administrative staff at both the elementary and secondary center levels
- Addresses existing secondary center school room size and technological deficiencies
- Minimizes the use of shared and undersized educational spaces and provides dedicated facilities for music, art, health, speech and vision, emotional support, life skills and autistic programs
- Provides meeting rooms for tutoring and small group instruction
- Provides private meeting rooms for guidance counseling and nurse/wellness interviews with students
- Provides the District an opportunity to secure operational economies by eliminating the duplication of staff services
- Minimizes staff travel time between schools
- Provides increased opportunities for educational programming initiatives and teaming activities amongst teachers and departments
- Re-establishes neighborhood elementary school in the East End section of Wilkes-Barre

Disadvantages

- Converts the G.A.R. Jr/Sr. High School to a New Middle School or Junior High
- During construction renovation work at the New Middle School or Junior High, students would need to be temporarily relocated and/or the construction renovation work phased over two summer breaks. Students and staff may be inconvenienced and the educational programming negatively impacted. Minor construction work may also occur during the school year further impacting the educational environment
- Construction costs associated with the construction renovation work at the New Middle School or Junior High could escalate upon the discovery of unforeseen conditions
- Increases transportation costs as Grade 9-12 students who would traditionally walk to G.A.R. may need to be bused to the New High School at the Meyers site and Grade 7-8 students who would traditionally walk to Meyers may need to be bused to the New Middle School or Junior High at the G.A.R. site

Option 5: Retain the Three Secondary School Model at the Existing Sites

SUMMARY OF WORK & PROPOSED ALIGNMENT:

A. New North Sr. High School – Construction of a New High School serving 1,200 - 1,300 students in Grades 9-12, encompassing approximately 245,000 SF, and located at the existing James M. Coughlin Sr. High School site and immediately adjacent areas. The New North High School would serve students who would traditionally be enrolled at Coughlin High School.

   A demolition budget to address Coughlin is included in the cost. Acquisition of adjacent properties and related demolition, if required, would be additional costs.

   1. Coughlin Sr. High School: $63,882,500

B. New South Jr./Sr. High School – Construction of a New High School serving 1,000 - 1,100 students in Grades 7-12, encompassing approximately 225,000 SF, and located at the existing Elmer L. Meyers Jr./Sr. High School site and immediately adjacent areas. The New South High School would serve students who would traditionally be enrolled in Grades 7-12 at Meyers Jr./Sr. High School.

   A demolition budget to address Meyers is included in the cost. Acquisition of adjacent properties and related demolition, if required, would be additional costs.

   1. Meyers Jr./Sr. High School: $61,187,500

C. New Central Jr./Sr. High School – Renovation and improvements to the existing G.A.R. Jr./Sr. High School serving 800 – 850 students in Grades 7-12. The New Central High School would serve students who would traditionally be enrolled in Grades 7-12 at G.A.R. Jr./Sr. High School.

   1. G.A.R. Jr/Sr. High School: $39,000,000

D. New Short-Term Temporary High School for Grades 9-10 and Long-Term Permanent Elementary – Renovation and improvements to the Edward Mackin Elementary School to establish a temporary High School serving 450-500 students in Grades 9-10 who would traditionally be enrolled in Grades 9-10 of the existing Coughlin Sr. High School. Temporary closure of the Coughlin Sr. High School Main Building.

   1. Edward Mackin School $9,242,200

Advantages

- Maintains neighborhood school presence in downtown Wilkes-Barre, the Heights section of Wilkes-Barre, and South Wilkes-Barre
- Maintains community involvement based on the District's historical alignment
- Maintains historical transportation costs
- Maintains traditional pedestrian patterns
- Replaces the existing Coughlin and Meyers schools, both of which fail to provide facilities satisfying contemporary educational standards
- Provides Renovated or New Secondary Centers meeting modern energy efficiency, architectural, space, day-lighting, air quality, and contemporary educational facility standards
- Provides additional office space and conference areas for faculty and administrative staff at all three secondary centers
- Addresses existing secondary center room size and technological deficiencies
- Minimizes the use of shared and undersized educational spaces and provides dedicated facilities for music, art, health, speech and vision, emotional support, life skills and autistic programs
- Provides meeting rooms for tutoring and small group instruction
- Provides private meeting rooms for guidance counseling and nurse/wellness interviews with students
- Re-establishes neighborhood elementary school in the East End section of Wilkes-Barre

Disadvantages

- During construction renovation work at each secondary center, a substantial portion of the student body would need to be temporarily relocated. The construction renovation work would also be phased over multiple summer breaks and may also occur during the school year. Students and staff may be inconvenienced and the educational programming will likely be negatively impacted
- Construction costs associated with the construction renovation work at the secondary centers could escalate upon the discovery of unforeseen conditions
- Equal educational opportunities may be difficult to develop at the South and Central schools without significant facility and administrative/faculty costs
- Likely to have higher operating and staffing costs when compared to the consolidated or two high school options because of the duplication of facilities and staff services

REIMBURSEMENT

When a school district undertakes a major construction project and seeks reimbursement from the Commonwealth, a process known as PlanCon is initiated. PlanCon, an acronym for Planning and Construction Workbook, is a set of forms and procedures used to apply for Commonwealth reimbursement. The PlanCon forms are designed to:

- Document a local school district's planning process
- Provide justification for a project to the public
- Ascertain compliance with state laws and regulations
- Establish the level of state participation in the cost of the project

A condition for all reimbursement is that the entire building be brought up to educational standards and reasonably current construction standards. The educational and construction standards applicable to a project will be determined by the District's Board but must be based on applicable construction codes and professional guidelines.

ESTIMATED STATE REIMBURSEMENT FOR THE PROJECT:

The Commonwealth reimburses a school district for a portion of the principal and interest which the district pays each year on the bond issue(s) used to finance a reimbursable project. The amount of reimbursement is determined by two factors:

- The percentage of the project determined by the Department of Education to be reimbursable
- The district's market value aid ratio (MVAR) or Capital Account Reimbursement Fraction (CARF), which is annually adjusted.

If, for example, a school district estimates that 39.98% of the project will be reimbursed and the district's aid ratio for FY2011-2012 is 64.00%, the product of these two numbers is 25.589%. Therefore, for each dollar paid by the district towards its reimbursable debt, the Commonwealth will reimburse the district approximately 25 cents. The estimated state reimbursement percentage is calculated in PlanCon Part D.

The Estimated State Reimbursement for each Option follows. Coughlin Sr. High School, Meyers Jr./Sr. High School and Dodson Elementary have classroom sizes below PDE's minimum class size requirement of 660 square feet by approximately 37%, 67%, and 60% respectively. The undersized classrooms do not receive FTE's (full time equivalent) which affects reimbursement. District Administration Building and Wilkes-Barre Township Maintenance/Storage, not being educational facilities, are not eligible for reimbursement.

Additional funding is provided for:

- Projects constructed and based on an approved school facility design published on the Department's School Design Clearinghouse
- Projects where the general construction contract alters or adds to an existing building
- School buildings receiving a silver, gold or platinum certification from the United States Green Building Council's Leadership in Energy and Environmental Design Green Building Rating System (LEED-NC™) certification or two, three or four Green Globes™ certification on or after January 1, 2005.

The reimbursement values identified on the following pages are conceptual estimates and are for planning purposes only. The values should be viewed from an order of magnitude standpoint. The permanent reimbursement is not calculated until a specific project is completed and PlanCon Part J is approved.

The reimbursement values are based on a rational K-12 alignment, a typical educational program, an efficient design, and historical PlanCon regulations and reimbursement criteria.

The reimbursement values will change based on the PlanCon regulations in-place at the time of the PlanCon submissions, the District's educational alignment and space programming, and the specific project's educational and space programs. The reimbursement schedule is dependent on the PlanCon approval schedule and the availability of State funding.

Wilkes-Barre Area School District

ESTIMATED STATE REIMBURSEMENT - OPTION 1

Renovation of Existing Schools per Code

	School Facility	Total Project Cost	Commonwealth Share	School District Share
	James M. Coughlin High School	$83,200,000	*$4,043,500*	$79,156,500
	Elmer L. Meyers Jr. / Sr. High School	$113,500,000	*$2,882,900*	$110,617,100
	G.A.R. Jr. / Sr. High School	$39,000,000	*$5,857,800*	$33,142,200
	Solomon-Plains Elementary / Jr. High	$4,300,000	*$2,472,500*	$1,827,500
	Daniel J. Flood Elementary	$12,700,000	*$2,442,200*	$10,257,800
	Boyd Dodson Elementary	$8,800,000	*$843,000*	$7,957,000
	Dr. David W. Kistler Elementary	$25,000,000	*$3,432,500*	$21,567,500
	Heights-Murray Elementary	$17,300,000	*$2,963,400*	$14,336,600
	Mackin Elementary	$9,242,200	*$1,903,800*	$7,338,400

Wilkes-Barre Area School District

ESTIMATED STATE REIMBURSEMENT - OPTION 2

Two New High Schools at Two New Sites

	School Facility	Total Project Cost	Commonwealth Share	School District Share
A.1	New North High School at Biscontini Property (1200 students)	$72,077,500	*$7,250,900*	$64,826,600
A.2	New North High School at Pagnotti Property (1200 students)	$75,652,500	*$7,270,200*	$68,382,300
A.3	New North High School at Solomon-Plains Property (1200 students)	$69,217,500	*$7,260,900*	$61,956,600
B.1	New Central High School at Siniawa Property (1200 students)	$73,810,000	*$7,240,700*	$66,569,300
B.2	New Cental High School at Empire Property (1200 students)	$71,307,500	*$7,251,900*	$64,055,600
C.1	New Middle School or Junior High (former G.A.R. Jr. / Sr. High School)	$39,000,000	*$5,857,800*	$33,142,200
D.1	New Temporary High School (former Mackin Elementary)	$9,242,200	*$1,903,800*	$7,338,400

Wilkes-Barre Area School District

ESTIMATED STATE REIMBURSEMENT - OPTION 3

One Consolidated High School

	School Facility	Total Project Cost	Commonwealth Share	School District Share
A.1	New Consolidated High School at Biscontini Property (2500 students)	$113,740,000	*$11,942,700*	$101,797,300
A.2	New Consolidated High School at Empire Street Property (2500 students)	$112,970,000	*$11,952,200*	$101,017,800
A.3	New Consolidated High School at Pagnotti Property (2500 students)	$119,130,000	*$11,960,600*	$107,169,400
B.1	New Middle School or Junior High (former G.A.R. Jr. / Sr. High School)	$39,000,000	*$5,857,800*	$33,142,200
C.1	New Temporary High School (former Mackin Elementary)	$9,242,200	*$1,903,800*	$7,338,400

Wilkes-Barre Area School District

ESTIMATED STATE REIMBURSEMENT - OPTION 4

Two New Neighborhood High Schools at Existing Sites

	School Facility	Total Project Cost	Commonwealth Share	School District Share
A.1	New North High School on Existing Site (1200 students)	$63,882,500	*$7,276,200*	$56,606,300
B.1	New Central High School on Existing Site (1200 students)	$66,247,500	*$7,267,300*	$58,980,200
C.1	New Middle School or Junior High (former G.A.R. Jr. / Sr. High School)	$39,000,000	*$5,857,800*	$33,142,200
D.1	New Temporary High School (former Mackin Elementary)	$9,242,200	*$1,903,800*	$7,338,400

Wilkes-Barre Area School District

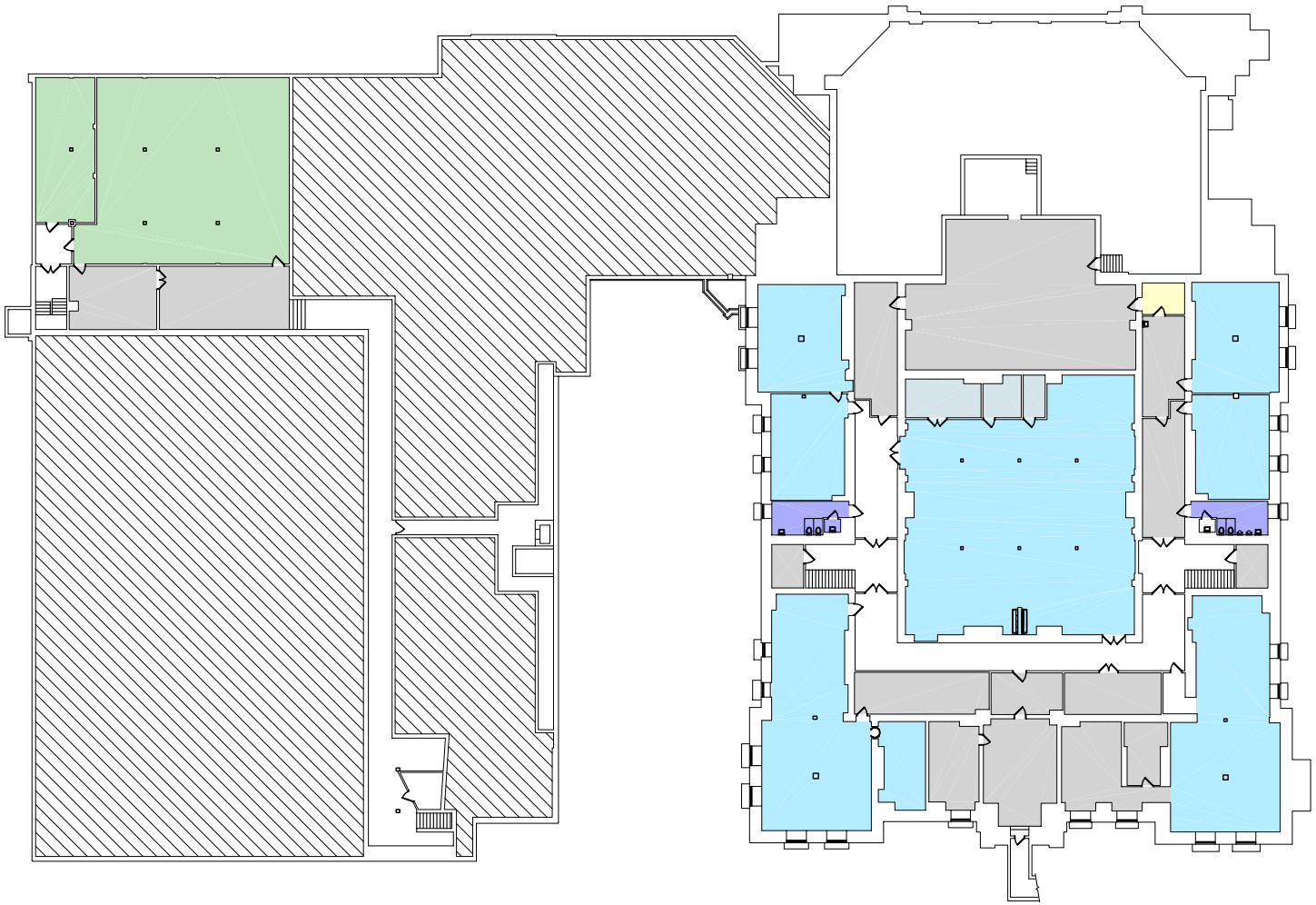
ESTIMATED STATE REIMBURSEMENT - OPTION 5

Retain the Three Secondary School Model at Existing Sites

	School Facility	Total Project Cost	Commonwealth Share	School District Share
A.1	New North High School at Coughlin Site (1200 students)	$63,882,500	*$7,276,200*	$56,606,300
B.1	New South High School at Meyers Site (1100 students)	$61,187,500	*$5,580,300*	$55,607,200
C.1	New Central High School (former G.A.R. Jr. / Sr. High School)	$39,000,000	*$5,857,800*	$33,142,200
D.1	New Temporary High School (former Mackin Elementary)	$9,242,200	*$1,903,800*	$7,338,400

Appendix

Existing Facility Plans



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- MECHANICAL SPACES
- CIRCULATION
- OTHER / STORAGE
- NATATORIUM

NORTH

0' 20' 40'

Borton Lawson

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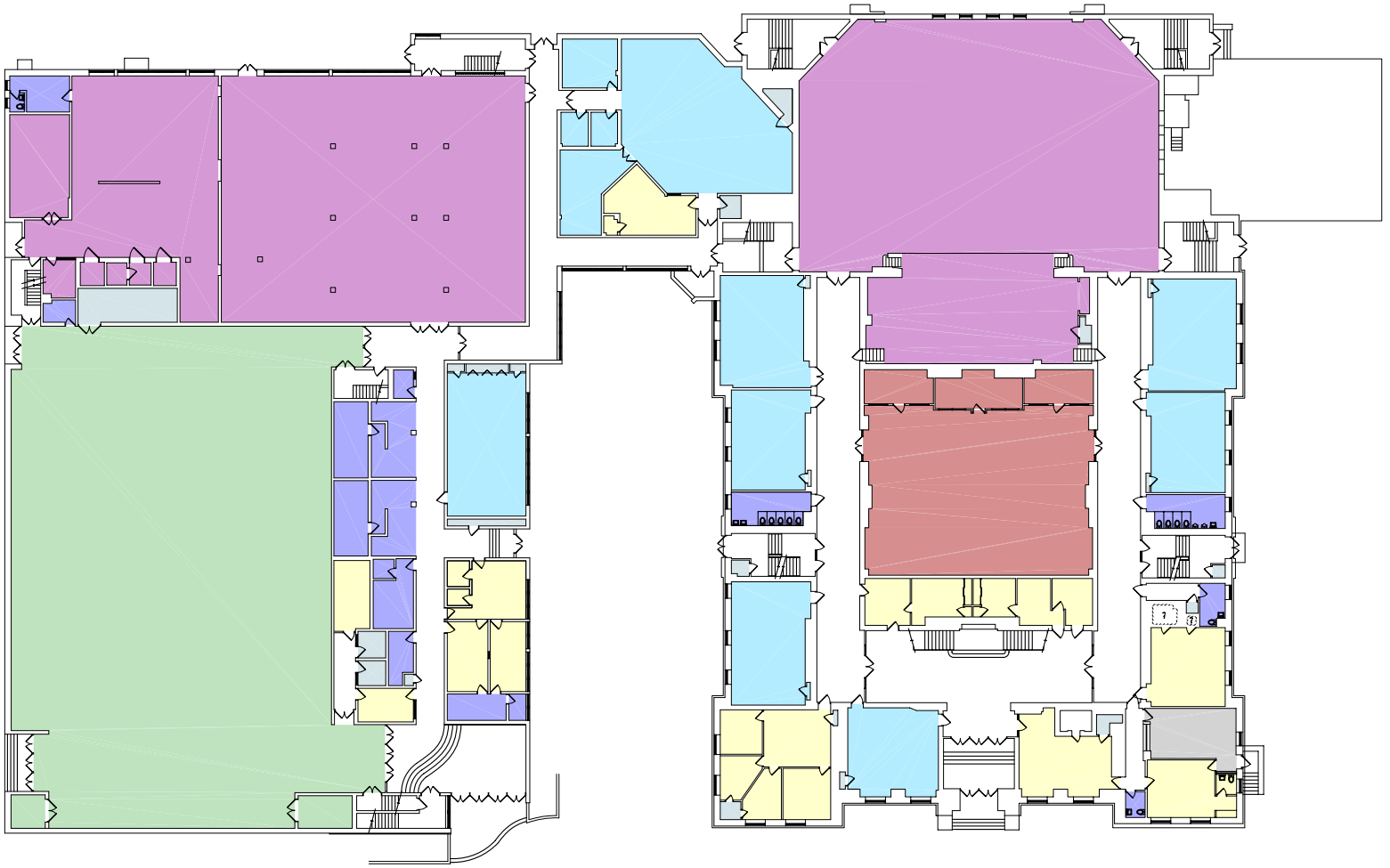
WKL ARCHITECTURE

Basement Plan

WILKES-BARRE AREA SCHOOL DISTRICT

JAMES M. COUGHLIN SENIOR HIGH SCHOOL

DECEMBER 8, 2014



Ground Floor Plan

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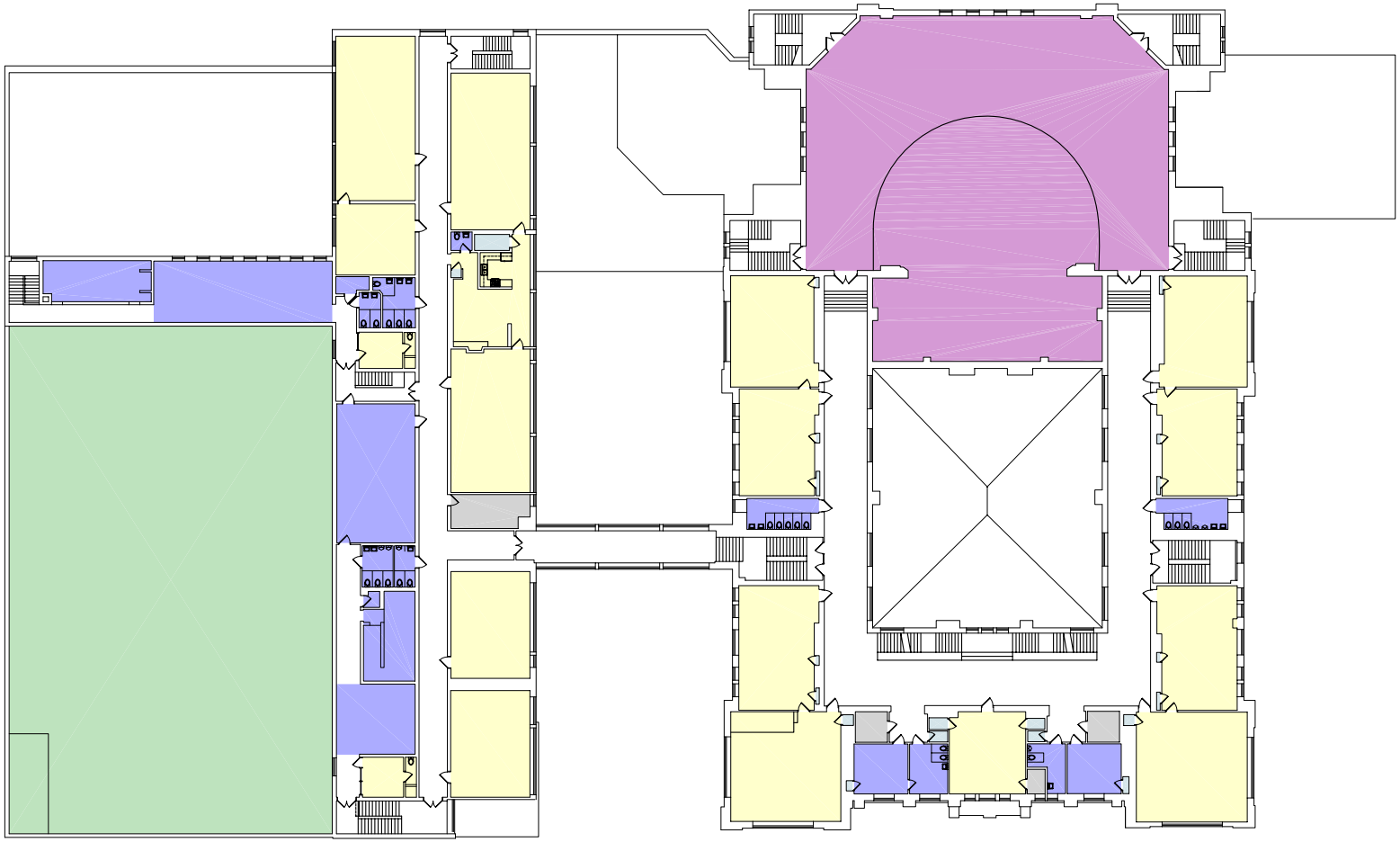
WILKES-BARRE AREA SCHOOL DISTRICT

JAMES M. COUGHLIN SENIOR HIGH SCHOOL

DECEMBER 8, 2014



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- NATATORIUM

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Second Floor Plan

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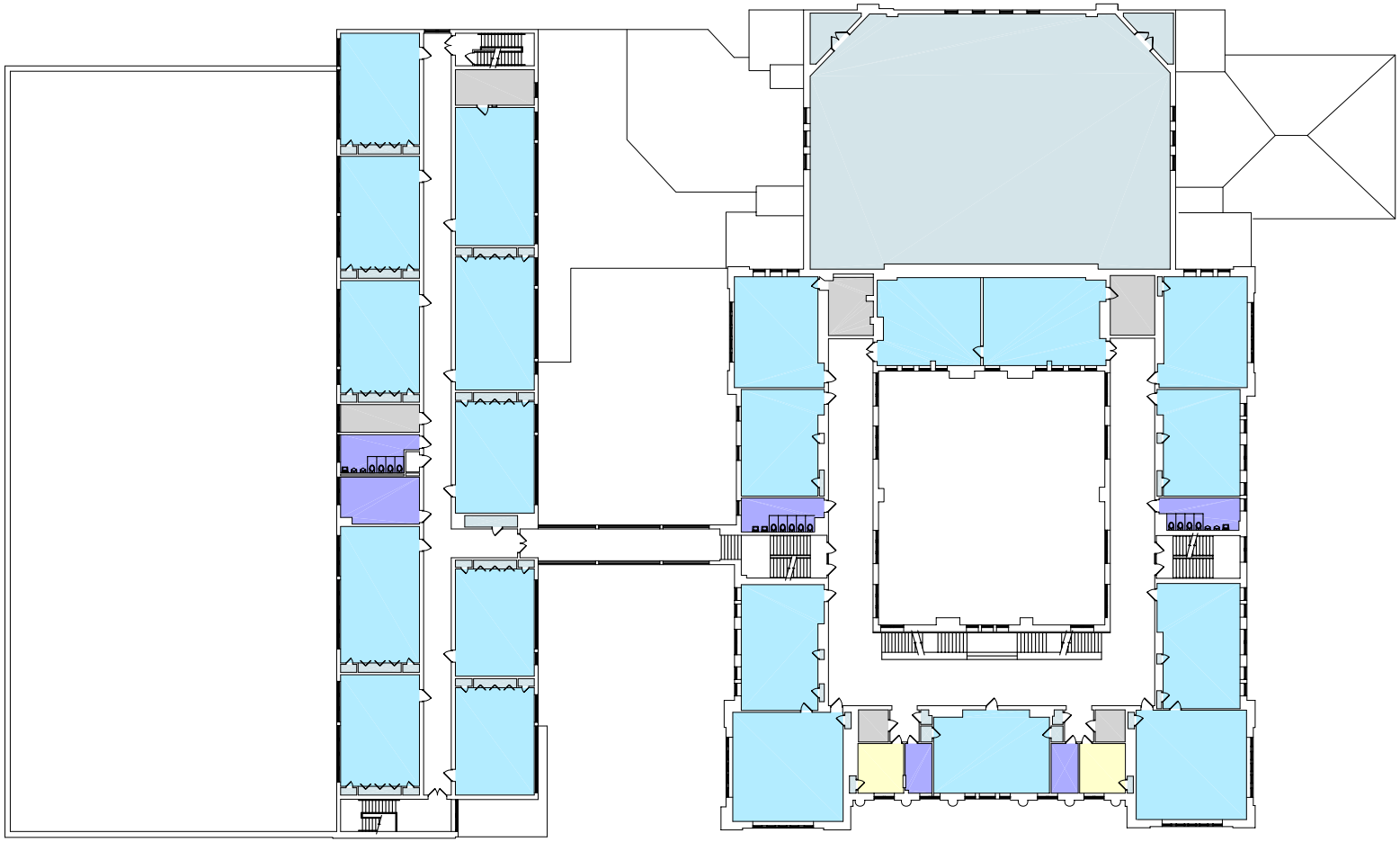
WILKES-BARRE AREA SCHOOL DISTRICT

JAMES M. COUGHLIN SENIOR HIGH SCHOOL

DECEMBER 8, 2014



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- NATATORIUM

NORTH

0' 20' 40'

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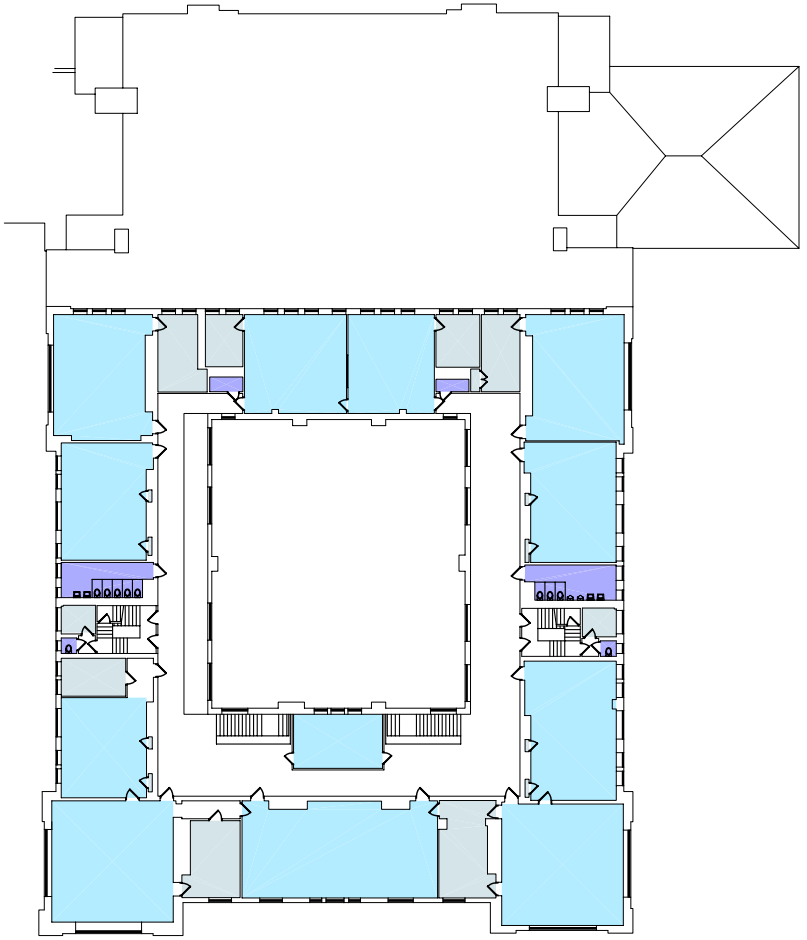
Third Floor Plan

WILKES-BARRE AREA SCHOOL DISTRICT

JAMES M. COUGHLIN SENIOR HIGH SCHOOL

DECEMBER 8, 2014



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- OTHER / STORAGE
- NATATORIUM

0' 20' 40'

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Fourth Floor Plan

WILKES-BARRE AREA SCHOOL DISTRICT

JAMES M. COUGHLIN SENIOR HIGH SCHOOL

DECEMBER 8, 2014

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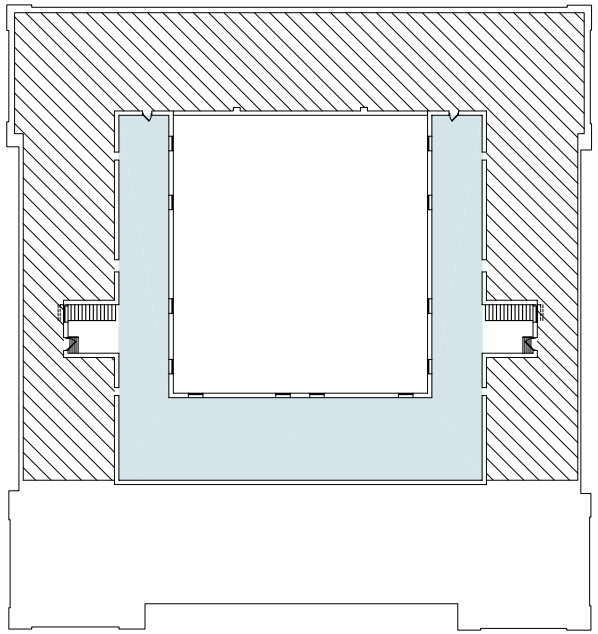

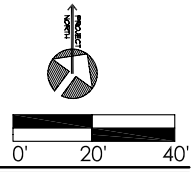

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Attic Floor Plan

WILKES-BARRE AREA SCHOOL DISTRICT

JAMES M. COUGHLIN SENIOR HIGH SCHOOL

DECEMBER 8, 2014

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- MECHANICAL SPACES
- CIRCULATION
- OTHER / STORAGE
- NATATORIUM

NORTH

0' 40' 80'

Borton Lawson ENGINEERING | ARCHITECTURE

LEI ALTENAH ENGINEERING INC.

WKL ARCHITECTURE

Basement Plan

WILKES-BARRE AREA SCHOOL DISTRICT

ELMER L. MEYERS JUNIOR / SENIOR HIGH SCHOOL

DECEMBER 8, 2014

LEGEND

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- OTHER / STORAGE
- NATATORIUM

Ground Floor Plan

0' 40' 80'

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WILKES-BARRE AREA SCHOOL DISTRICT

ELMER L. MEYERS JUNIOR / SENIOR HIGH SCHOOL

DECEMBER 8, 2014

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- OTHER / STORAGE
- NATATORIUM

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WKL ARCHITECTURE

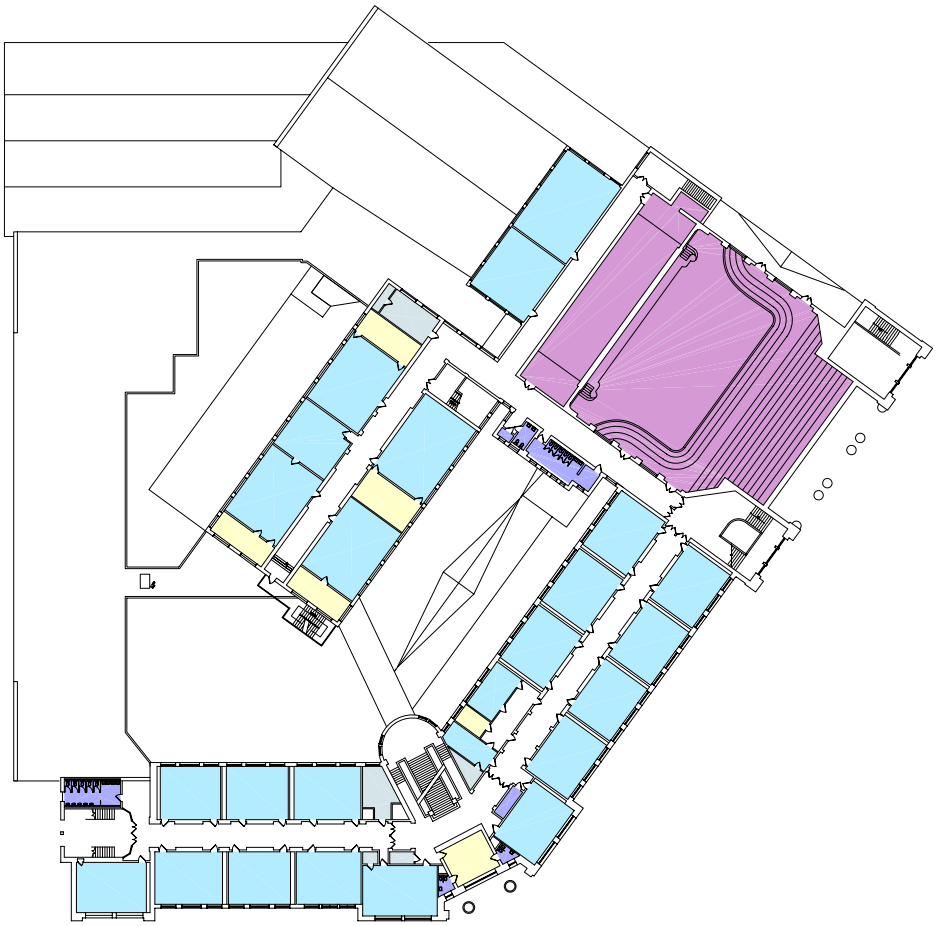
Second Floor Plan

0' 40' 80'

WILKES-BARRE AREA SCHOOL DISTRICT

ELMER L. MEYERS JUNIOR / SENIOR HIGH SCHOOL

DECEMBER 8, 2014



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- CIRCULATION
- OTHER / STORAGE
- NATATORIUM

Third Floor Plan

0' 40' 80'

Borton Lawson

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WKL ARCHITECTURE

WILKES-BARRE AREA SCHOOL DISTRICT

ELMER L. MEYERS JUNIOR / SENIOR HIGH SCHOOL

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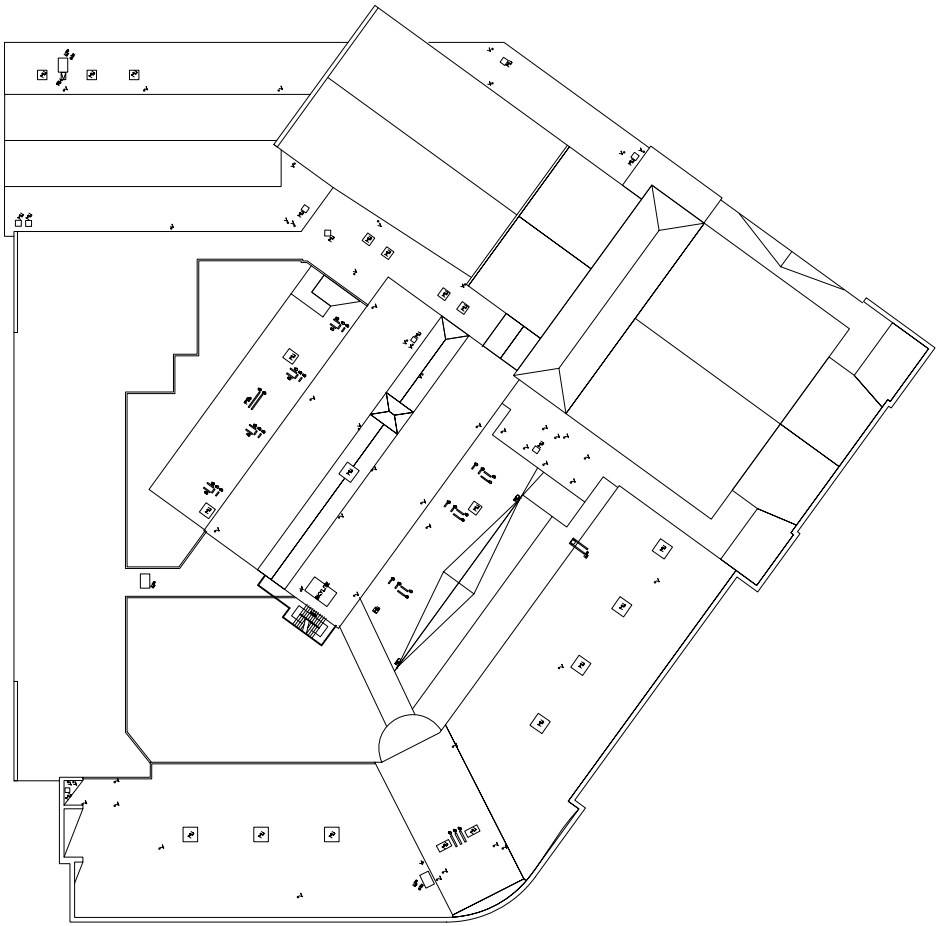

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- OTHER / STORAGE
- NATATORIUM

Roof Plan

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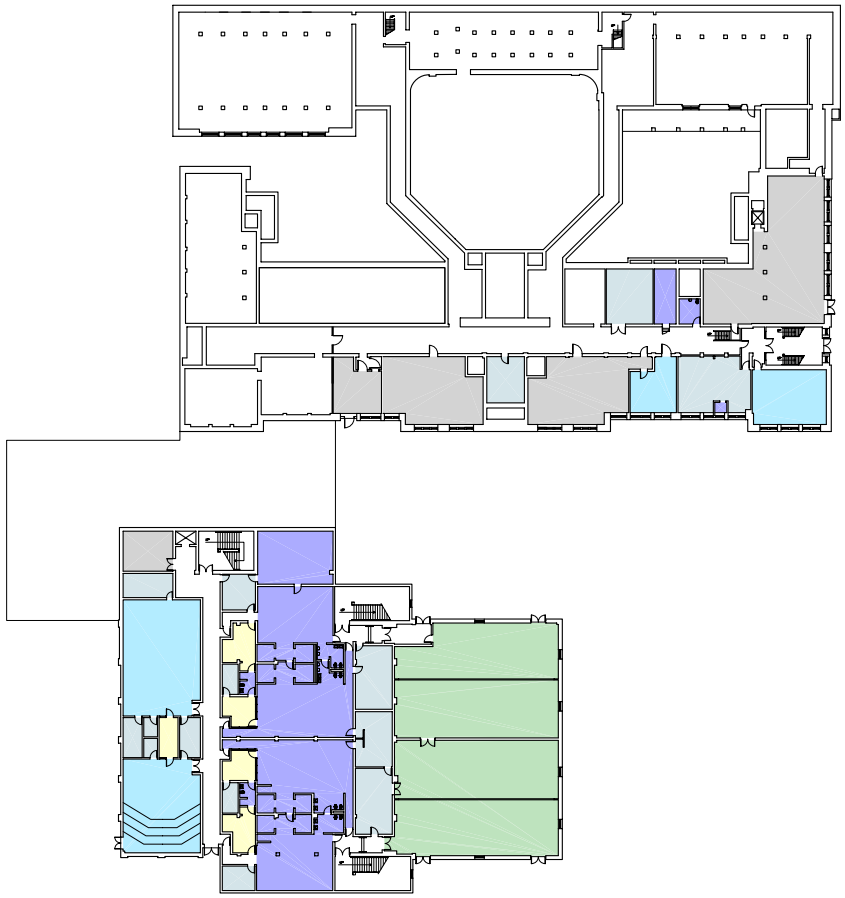
WILKES-BARRE AREA SCHOOL DISTRICT

ELMER L. MEYERS JUNIOR / SENIOR HIGH SCHOOL

DECEMBER 8, 2014



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- OTHER / STORAGE
- NATATORIUM

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WKL ARCHITECTURE

Basement Plan

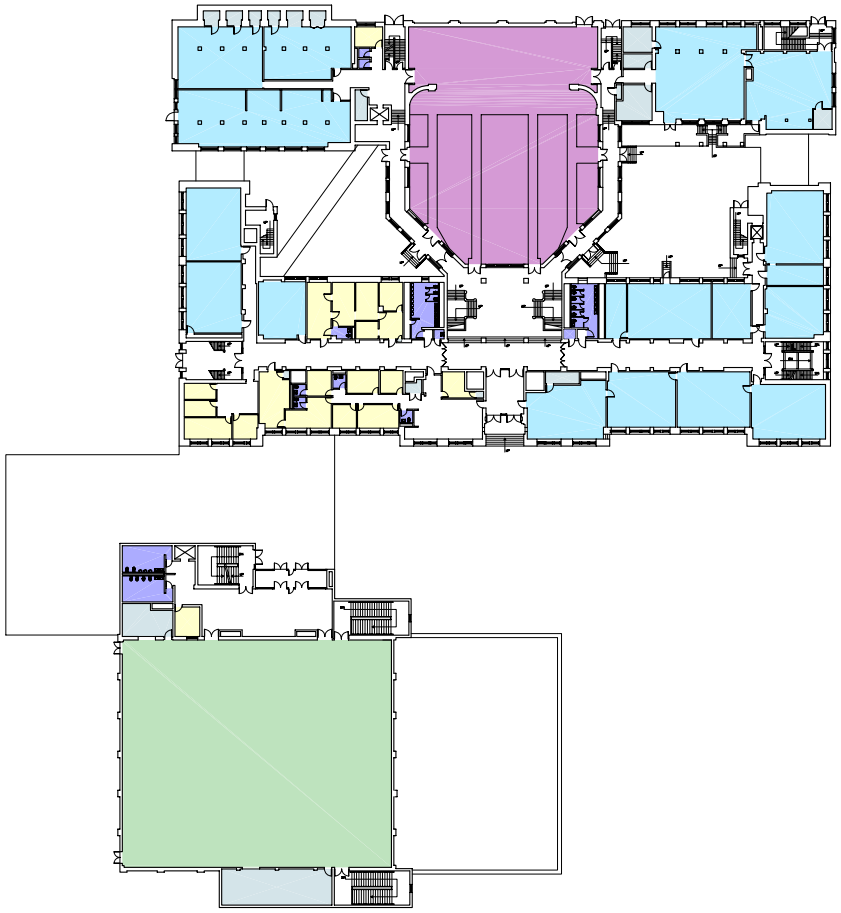
0' 40' 80'

PROJECT NORTH

WILKES-BARRE AREA SCHOOL DISTRICT

G.A.R. MEMORIAL JUNIOR / SENIOR HIGH SCHOOL

DECEMBER 8, 2014



LEGEND

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- MECHANICAL SPACES
- CIRCULATION
- OTHER / STORAGE
- NATATORIUM

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WKL ARCHITECTURE

Ground Floor Plan

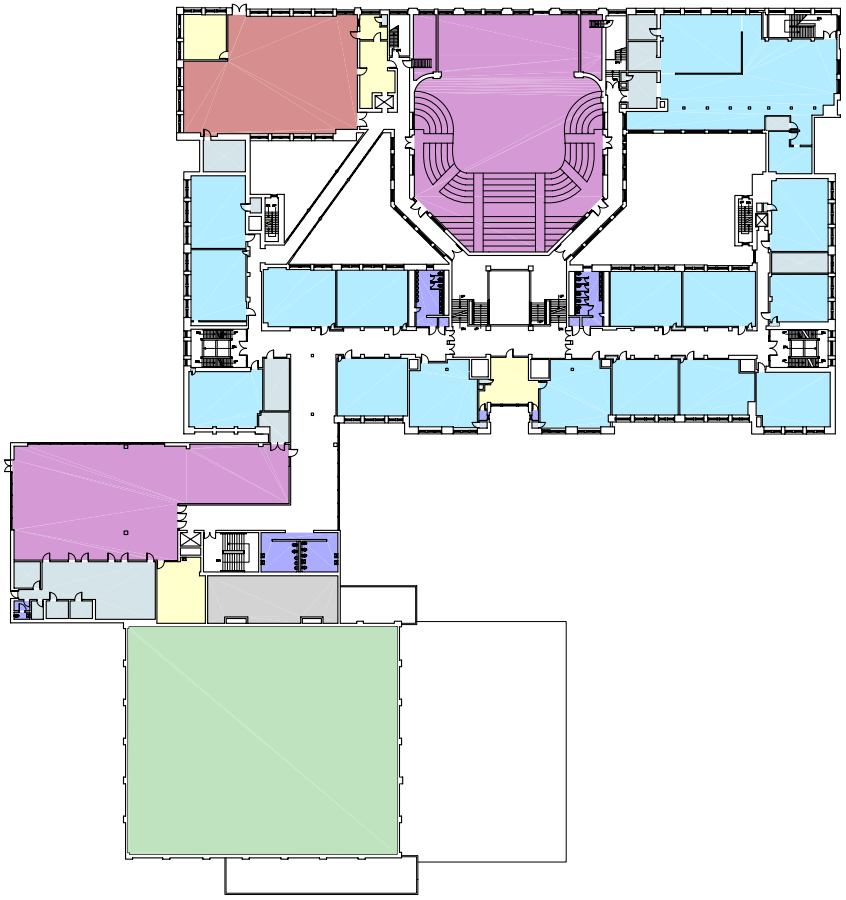
0' 40' 80'

PROJECT NORTH

WILKES-BARRE AREA SCHOOL DISTRICT

G.A.R. MEMORIAL JUNIOR / SENIOR HIGH SCHOOL

DECEMBER 8, 2014



LEGEND

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- MECHANICAL SPACES
- CIRCULATION
- OTHER / STORAGE
- NATATORIUM

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WKL ARCHITECTURE

Second Floor Plan

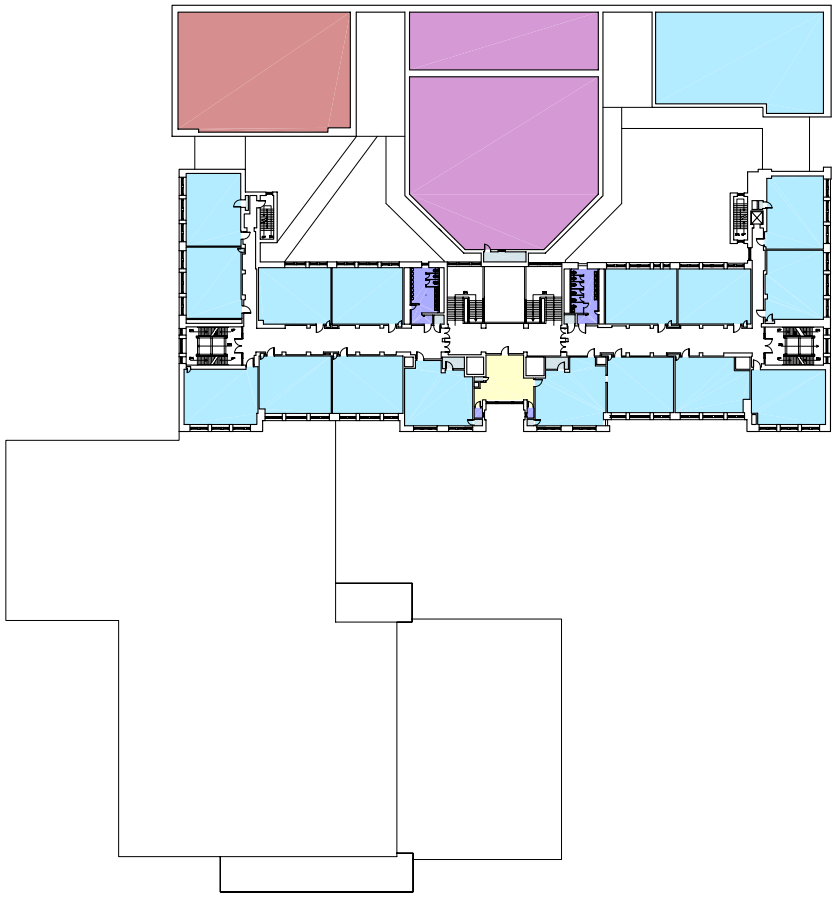
0' 40' 80'

PROJECT NORTH

WILKES-BARRE AREA SCHOOL DISTRICT

G.A.R. MEMORIAL JUNIOR / SENIOR HIGH SCHOOL

DECEMBER 8, 2014



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- OTHER / STORAGE
- NATATORIUM

Borton Lawson

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WKL ARCHITECTURE

Third Floor Plan

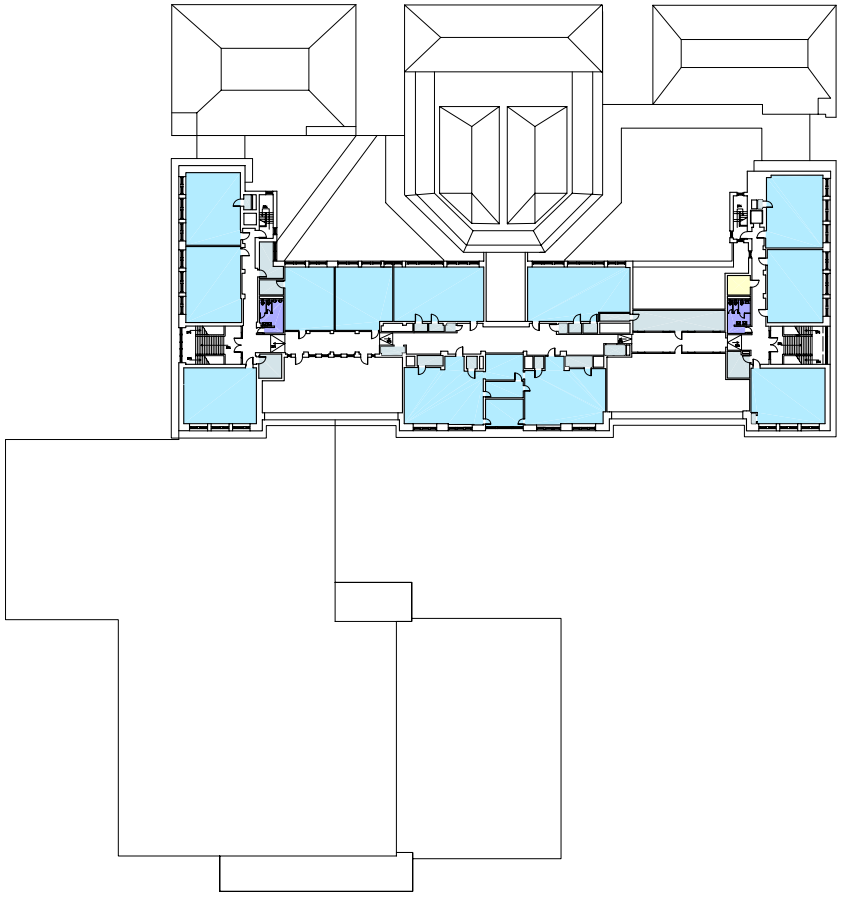
0' 40' 80'

PROJECT NORTH

WILKES-BARRE AREA SCHOOL DISTRICT

G.A.R. MEMORIAL JUNIOR / SENIOR HIGH SCHOOL

DECEMBER 8, 2014



LEGEND

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- LIBRARY
- CAFETERIA & AUDITORIUM
- MECHANICAL SPACES
- CIRCULATION
- OTHER / STORAGE
- NATATORIUM

Fourth Floor Plan

0' 40' 80'

PROJECT NORTH

Borton Lawson ENGINEERING | ARCHITECTURE

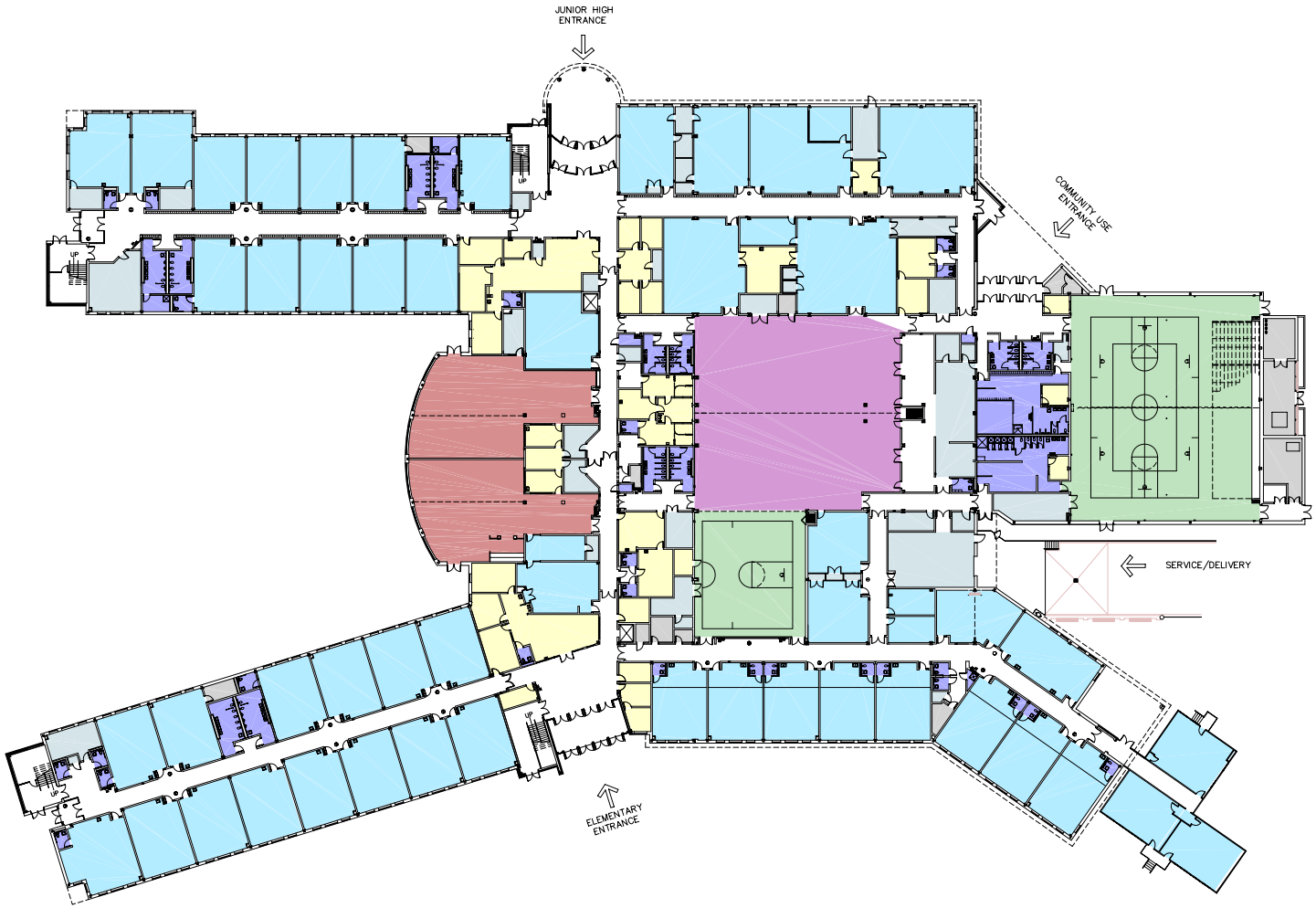
LEI ALTOONA ENGINEERING INC.

WKL ARCHITECTURE

WILKES-BARRE AREA SCHOOL DISTRICT

G.A.R. MEMORIAL JUNIOR / SENIOR HIGH SCHOOL

DECEMBER 8, 2014



LEGEND

- CLASSROOMS
- TOILETS & JANITORS CL.
- ADMINISTRATIVE SPACES
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- CAFETERIA & AUDITORIUM
- MECHANICAL SPACES
- CIRCULATION
- OTHER / STORAGE
- NATATORIUM

PROJECT NORTH

0' 40' 80'

Borton Lawson ENGINEERING | ARCHITECTURE

LEI ALTMAN ENGINEERING INC.

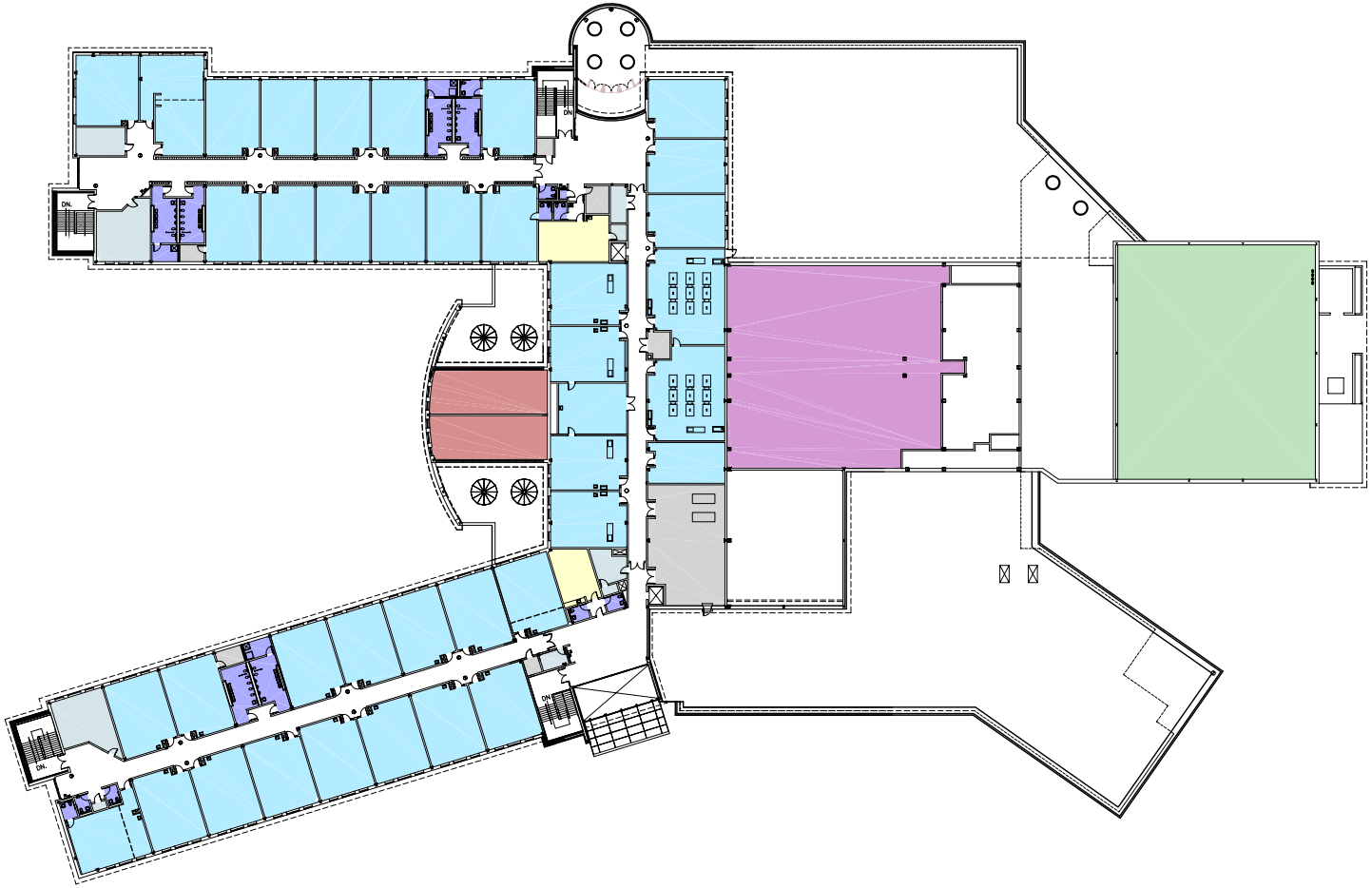
WKL ARCHITECTURE

Ground Floor Plan

WILKES-BARRE AREA SCHOOL DISTRICT

SOLOMON - PLAINS ELEMENTARY & JUNIOR HIGH SCHOOL

DECEMBER 8, 2014



LEGEND

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- TOILETS & JANITORS CL.
- ADMINISTRATIVE SPACES
- GYM. / ATHLETIC / MULTI-USE
- LIBRARY
- CAFETERIA & AUDITORIUM
- MECHANICAL SPACES
- CIRCULATION
- OTHER / STORAGE
- NATATORIUM

Borton Lawson ENGINEERING | ARCHITECTURE

LEI ALTOONA ENGINEERING, INC.

WKL ARCHITECTURE

Second Floor Plan

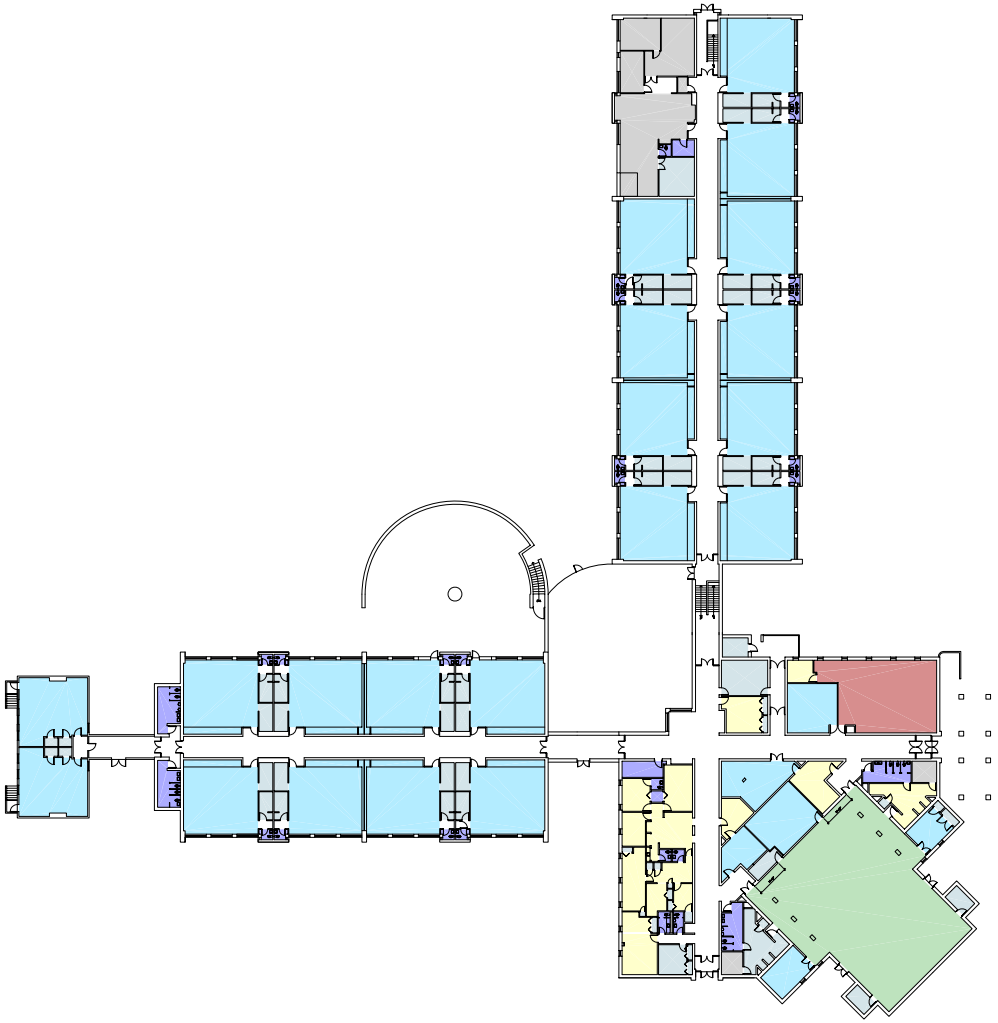
PROJECT NORTH

0' 40' 80'

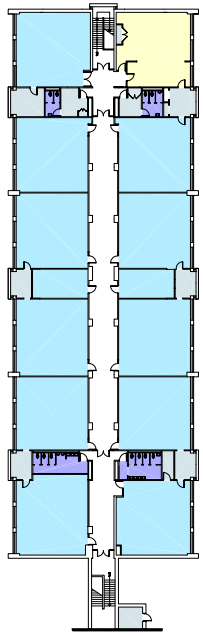
WILKES-BARRE AREA SCHOOL DISTRICT

SOLOMON - PLAINS ELEMENTARY & JUNIOR HIGH SCHOOL

DECEMBER 8, 2014



Ground Floor Plan



Second Floor Plan

LEGEND

- CLASSROOMS
- TOILETS & JANITORS CL.
- ADMINISTRATIVE SPACES
- GYM. / ATHLETIC / MULTI-USE
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PROJECT NORTH

0' 40' 80'

Borton Lawson ENGINEERING | ARCHITECTURE

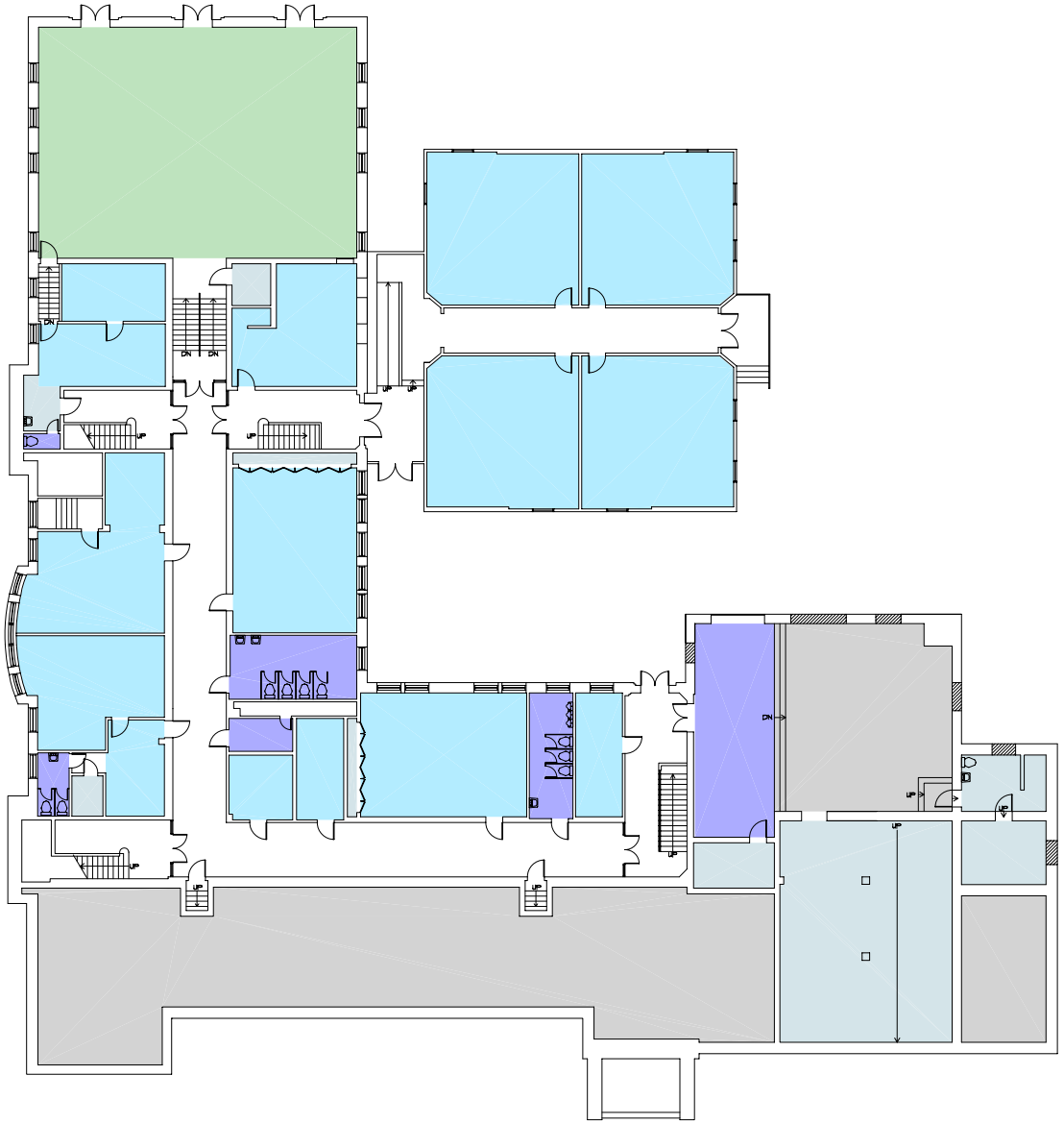
LEI ALTENAU ENGINEERING, INC.

WKL ARCHITECTURE

WILKES-BARRE AREA SCHOOL DISTRICT

DANIEL J. FLOOD ELEMENTARY SCHOOL

DECEMBER 8, 2014



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Basement Plan

0' 20' 40'

Borton Lawson

LEI

WKL ARCHITECTURE

WILKES-BARRE AREA SCHOOL DISTRICT

BOYD DODSON ELEMENTARY SCHOOL

DECEMBER 8, 2014

LEGEND

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Ground Floor Plan

0' 20' 40'

Borton Lawson ENGINEERING | ARCHITECTURE

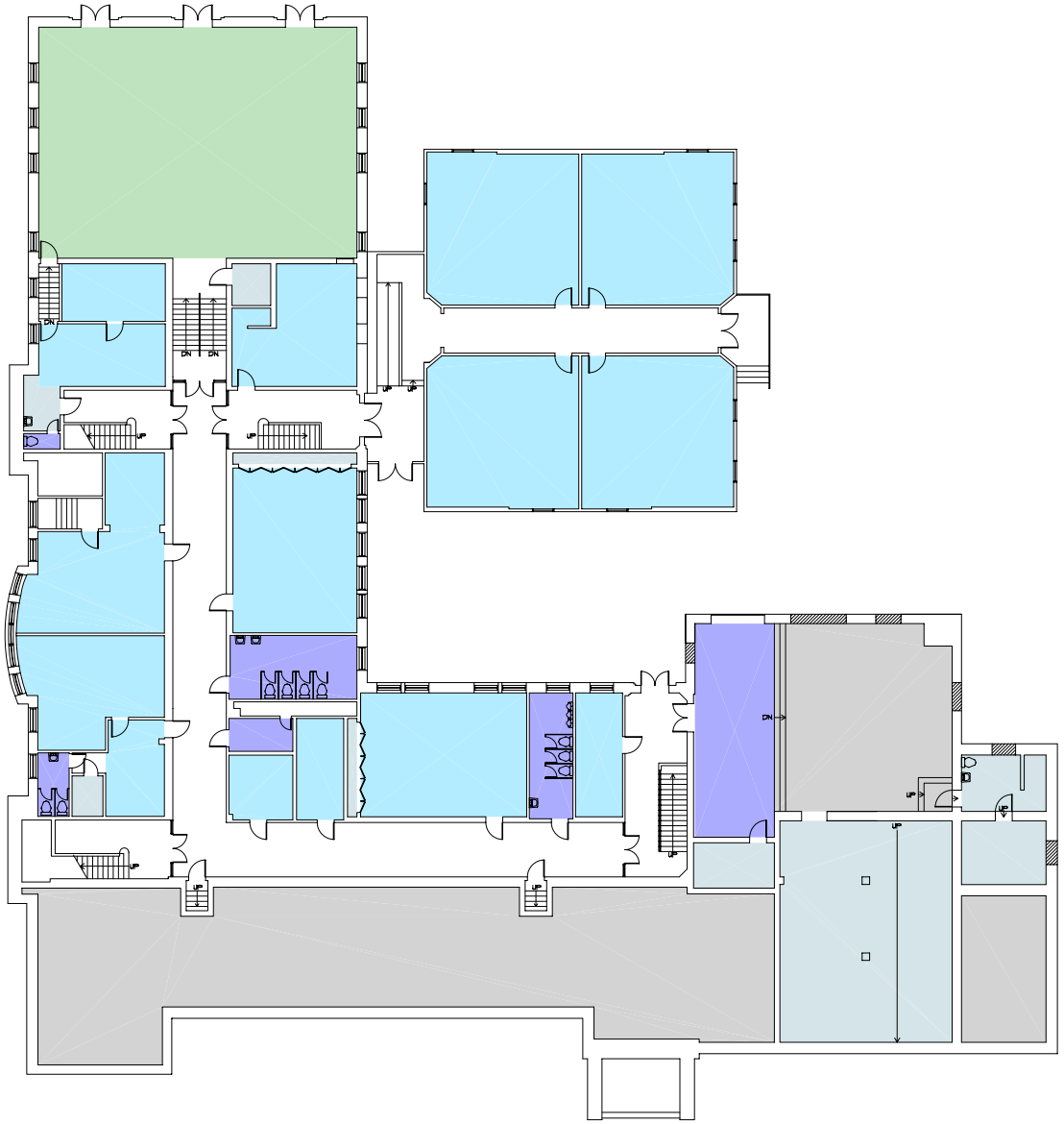
LEI ALTOONA ENGINEERING, INC.

WKL ARCHITECTURE

WILKES-BARRE AREA SCHOOL DISTRICT

BOYD DODSON ELEMENTARY SCHOOL

DECEMBER 8, 2014



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Second Floor Plan

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Borton Lawson

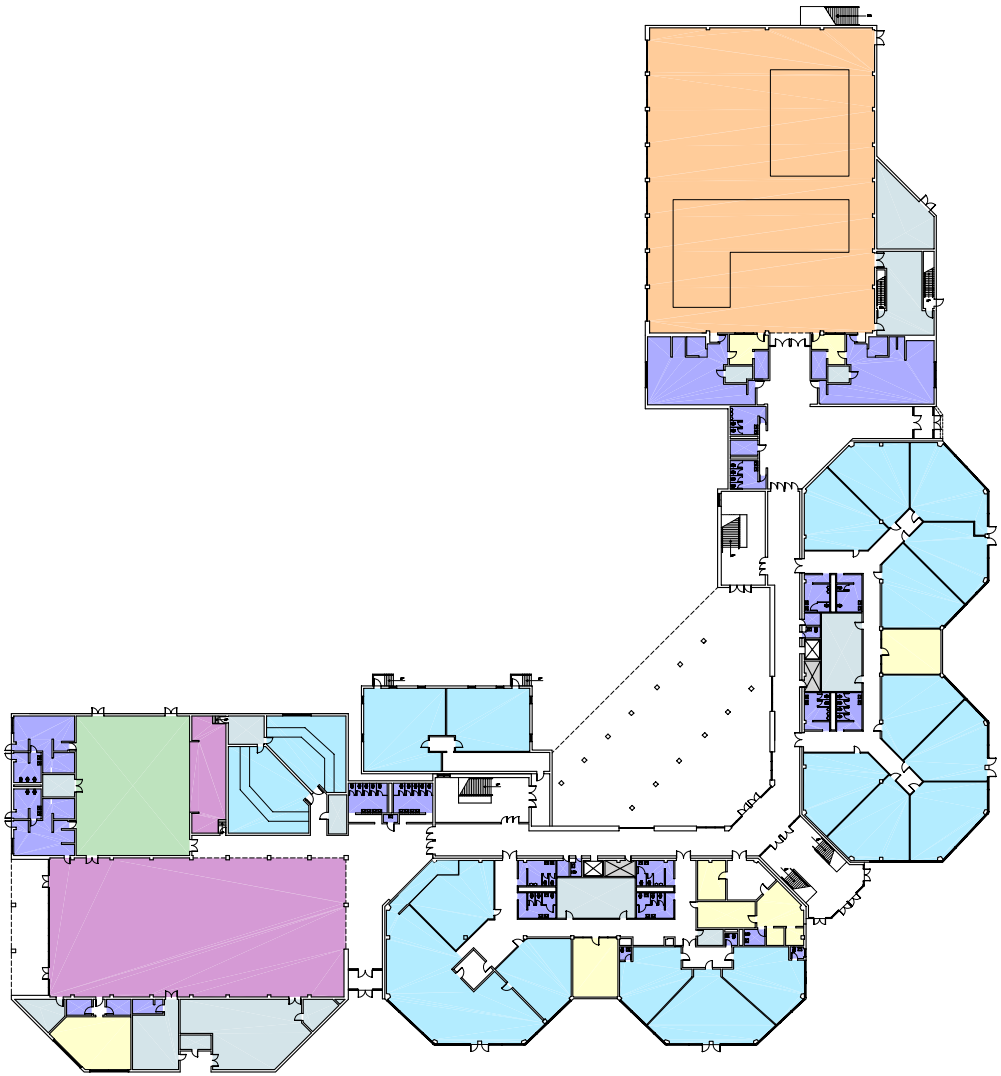
LEI

WKL ARCHITECTURE

WILKES-BARRE AREA SCHOOL DISTRICT

BOYD DODSON ELEMENTARY SCHOOL

DECEMBER 8, 2014



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PROJECT NORTH

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Borton Lawson ENGINEERING | ARCHITECTURE

LEI ALTENAU ENGINEERING, INC.

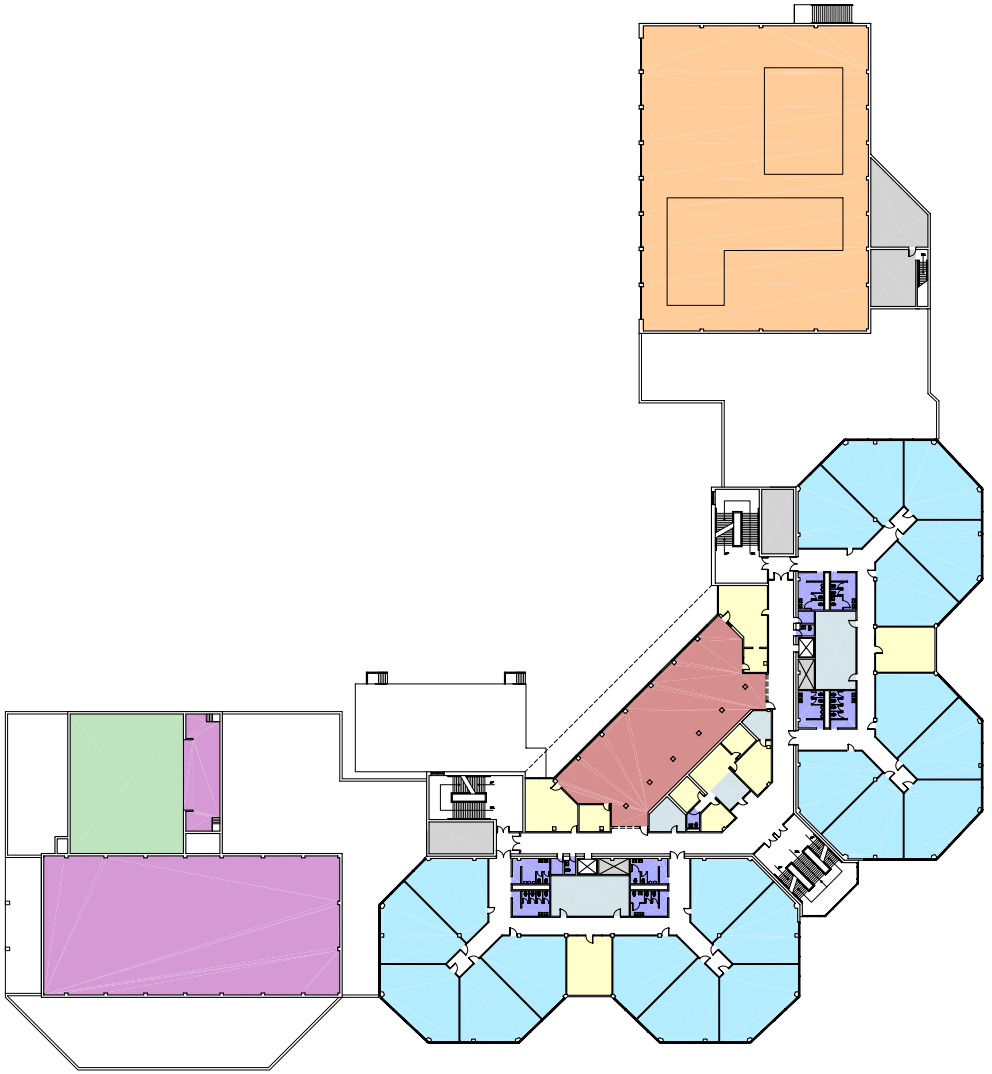
WKL ARCHITECTURE

Ground Floor Plan

WILKES-BARRE AREA SCHOOL DISTRICT

DR. DAVID W. KISTLER ELEMENTARY SCHOOL

DECEMBER 8, 2014



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Borton Lawson ENGINEERING | ARCHITECTURE

LEI ALTENAU ENGINEERING, INC.

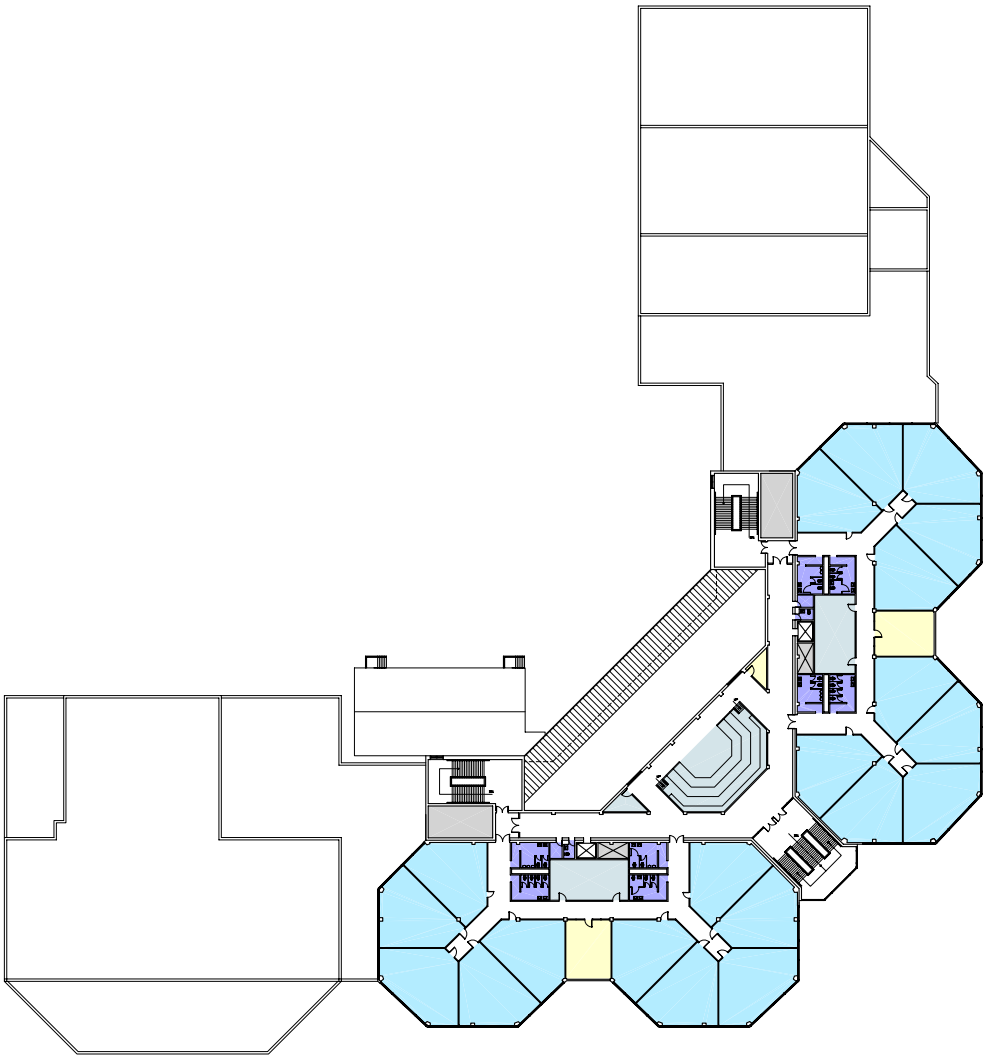
WKL ARCHITECTURE

Second Floor Plan

WILKES-BARRE AREA SCHOOL DISTRICT

DR. DAVID W. KISTLER ELEMENTARY SCHOOL

DECEMBER 8, 2014



LEGEND

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PROJECT NORTH

0' 40' 80'

Borton Lawson ENGINEERING | ARCHITECTURE

LEI ALTMAN ENGINEERING INC.

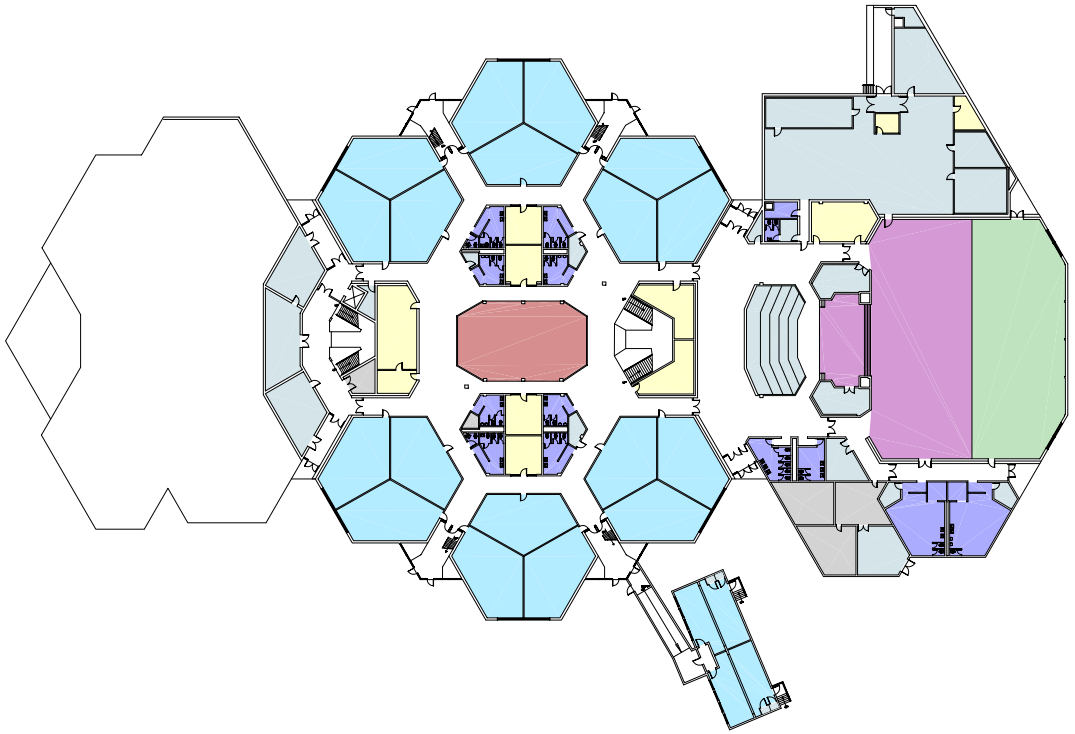
WKL ARCHITECTURE

Third Floor Plan

WILKES-BARRE AREA SCHOOL DISTRICT

DR. DAVID W. KISTLER ELEMENTARY SCHOOL

DECEMBER 8, 2014



LEGEND

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PROJECT NORTH

0' 40' 80'

Borton Lawson ENGINEERING | ARCHITECTURE

LEI ALTEMARE ENGINEERING, INC.

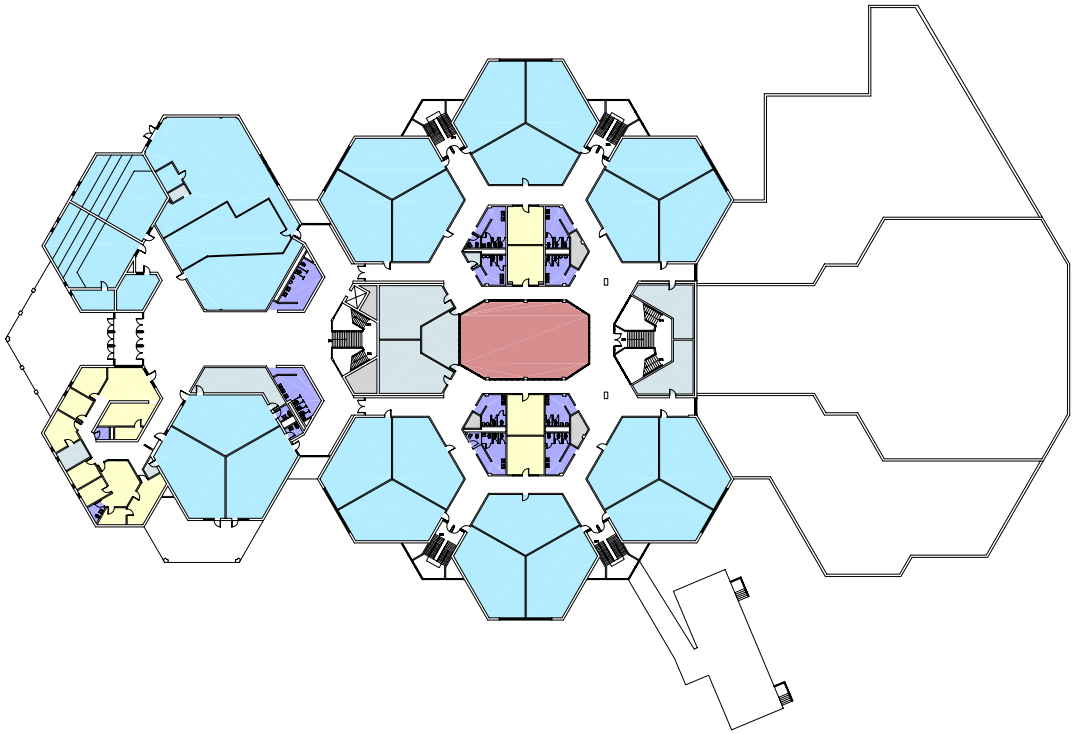
WKL ARCHITECTURE

Ground Floor Plan

WILKES-BARRE AREA SCHOOL DISTRICT

HEIGHTS - MURRAY ELEMENTARY SCHOOL

DECEMBER 8, 2014



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PROJECT NORTH

0' 40' 80'

Borton Lawson ENGINEERING | ARCHITECTURE

LEI ALTMAN ENGINEERING INC.

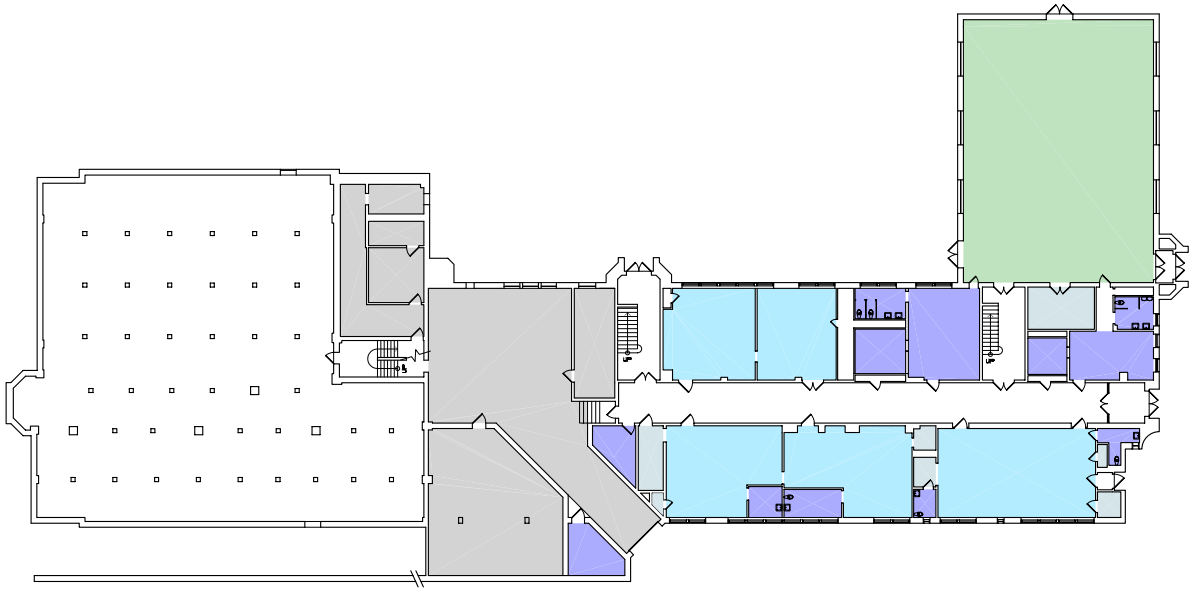
WKL ARCHITECTURE

Second Floor Plan

WILKES-BARRE AREA SCHOOL DISTRICT

HEIGHTS - MURRAY ELEMENTARY SCHOOL

DECEMBER 8, 2014



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- NATATORIUM

Borton Lawson

LEI

WKL ARCHITECTURE

Basement/ Ground Floor Plan

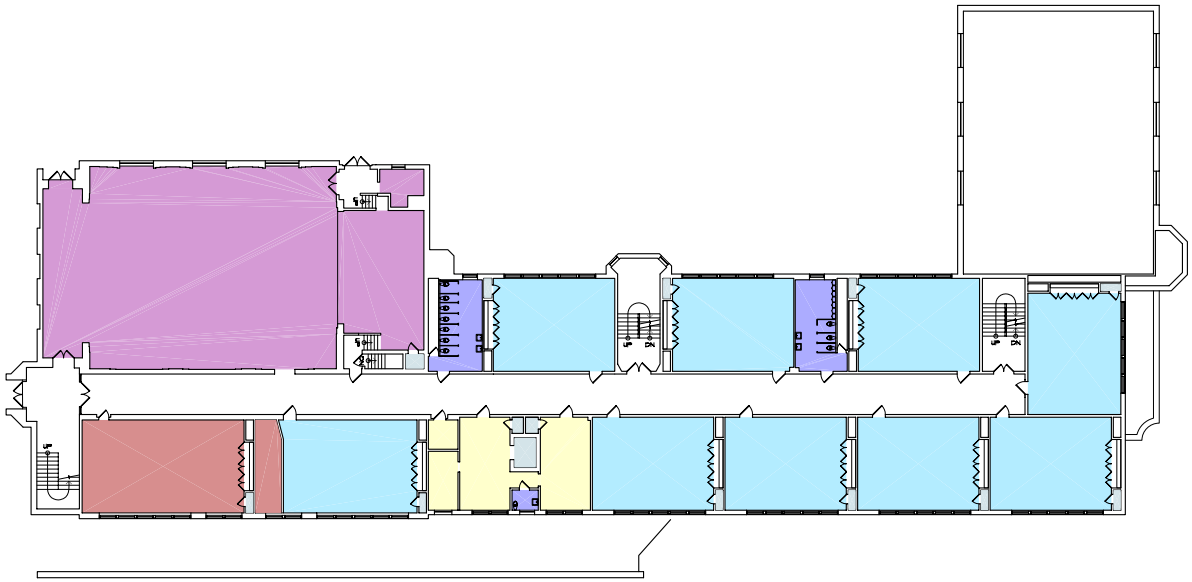
PROJECT NORTH

0' 20' 40'

WILKES-BARRE AREA SCHOOL DISTRICT

EDWARD MACKIN ELEMENTARY SCHOOL

DECEMBER 8, 2014



LEGEND

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PROJECT NORTH

0' 20' 40'

Borton Lawson ENGINEERING | ARCHITECTURE

LEI ALTENAU ENGINEERING, INC.

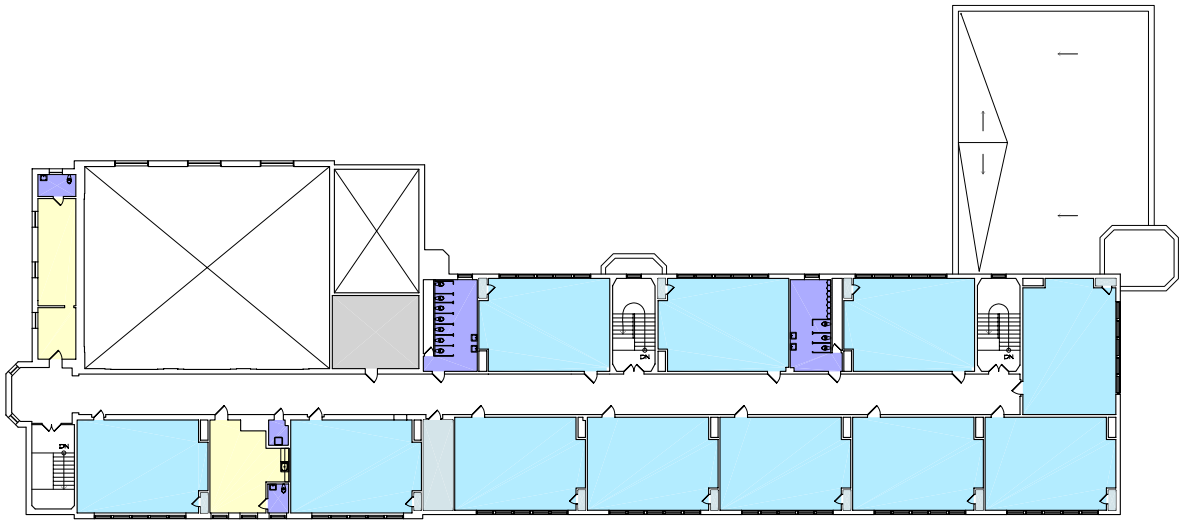
WKL ARCHITECTURE

Second Floor Plan

WILKES-BARRE AREA SCHOOL DISTRICT

EDWARD MACKIN ELEMENTARY SCHOOL

DECEMBER 8, 2014



LEGEND

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- CIRCULATION
- OTHER / STORAGE
- NATATORIUM

PROJECT NORTH

0' 20' 40'

Borton Lawson ENGINEERING | ARCHITECTURE

LEI ALDINAIRE ENGINEERING, INC.

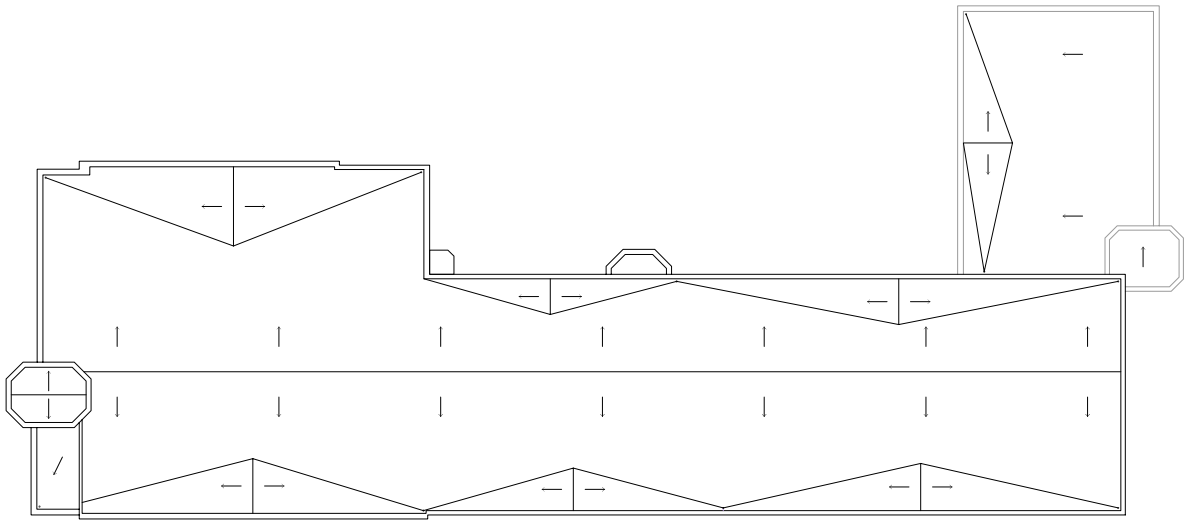
WKL ARCHITECTURE

Third Floor Plan

WILKES-BARRE AREA SCHOOL DISTRICT

EDWARD MACKIN ELEMENTARY SCHOOL

DECEMBER 8, 2014



LEGEND

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- OTHER / STORAGE
- NATATORIUM

PROJECT NORTH

0' 20' 40'

Borton Lawson ENGINEERING | ARCHITECTURE

LEI ALDEMAN ENGINEERING, INC.

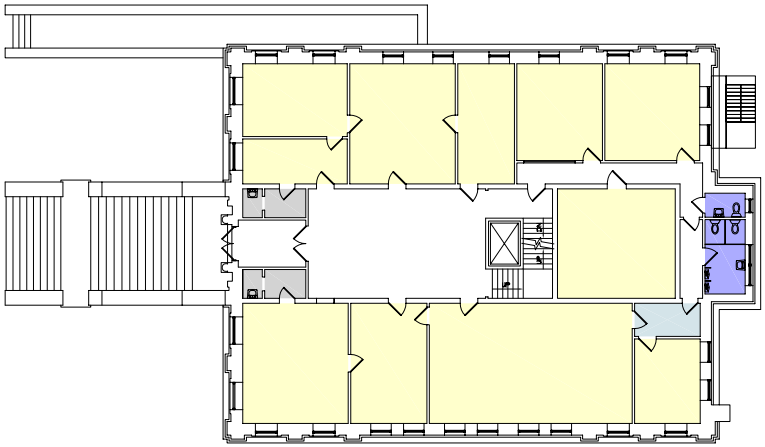
WKL ARCHITECTURE

Roof Plan

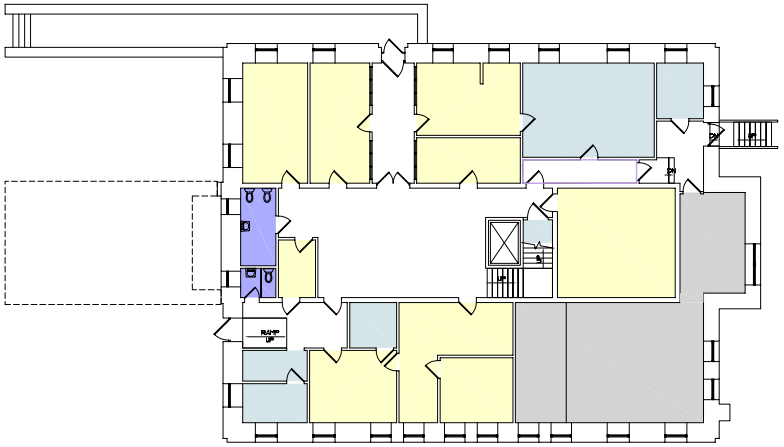
WILKES-BARRE AREA SCHOOL DISTRICT

EDWARD MACKIN ELEMENTARY SCHOOL

DECEMBER 8, 2014



Basement Plan



Ground Floor Plan

LEGEND

- CLASSROOMS
- TOILETS & JANITORS CL.
- ADMINISTRATIVE SPACES
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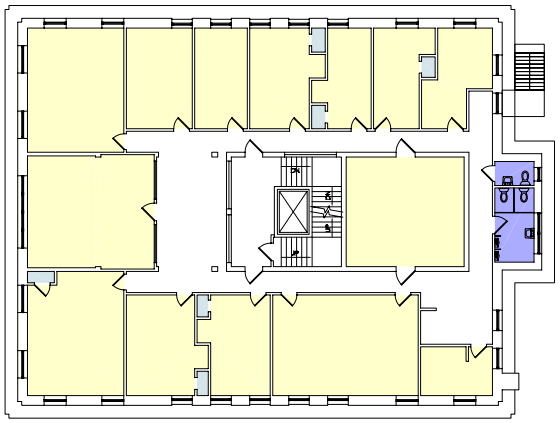
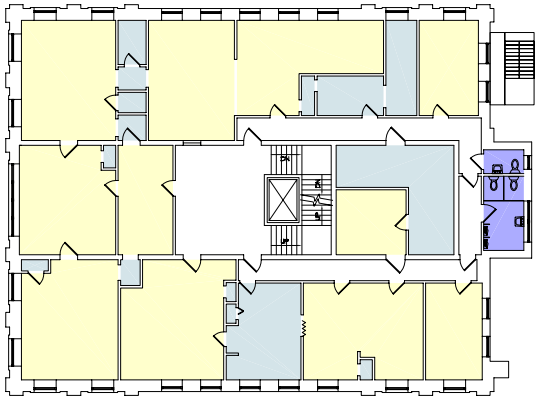
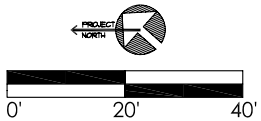


Second Floor Plan



Third Floor Plan



Borton Lawson

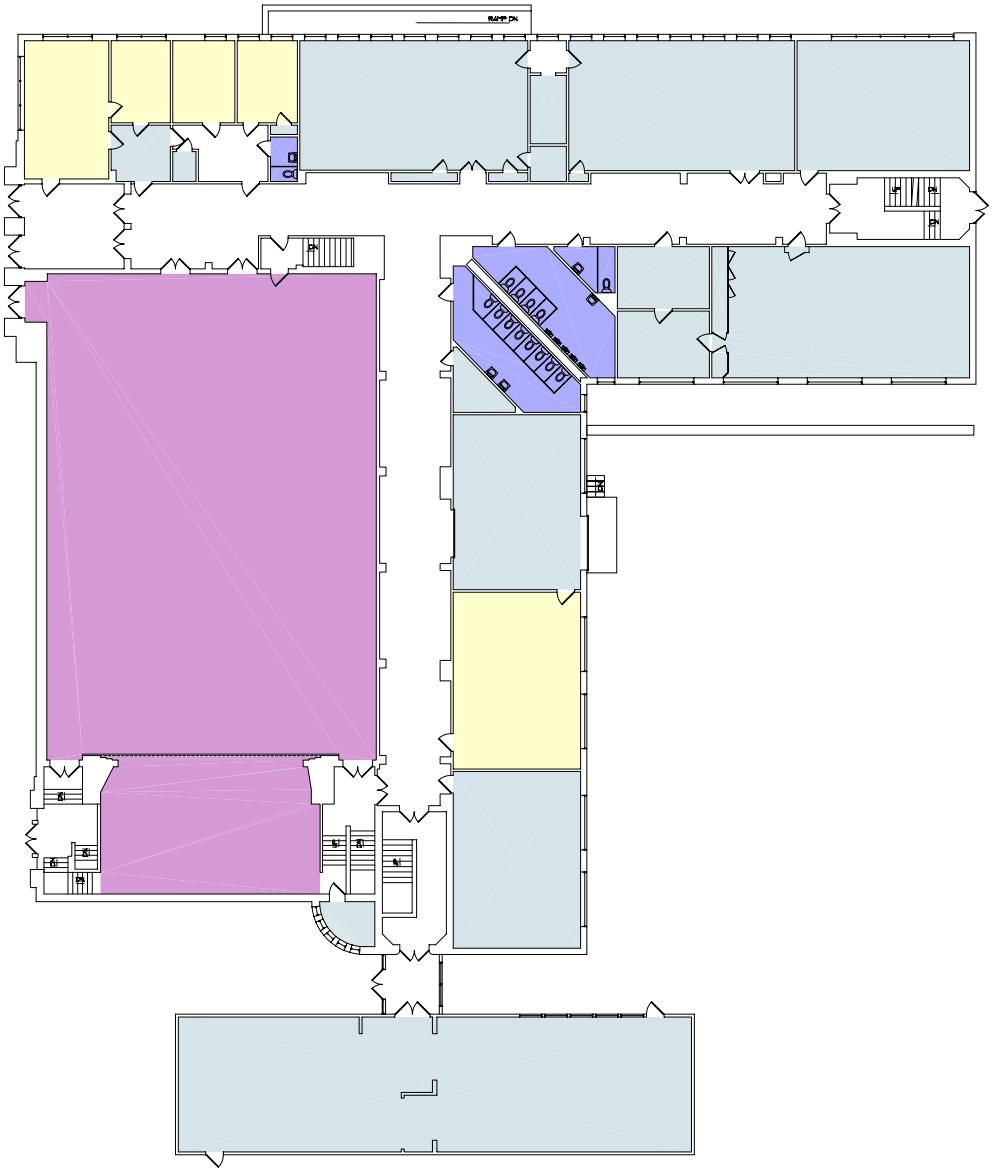
LEI

WKL ARCHITECTURE

WILKES-BARRE AREA SCHOOL DISTRICT

DISTRICT ADMINISTRATION BUILDING

DECEMBER 8, 2014



LEGEND

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Ground Floor Plan

0' 20' 40'

Borton Lawson ENGINEERING | ARCHITECTURE

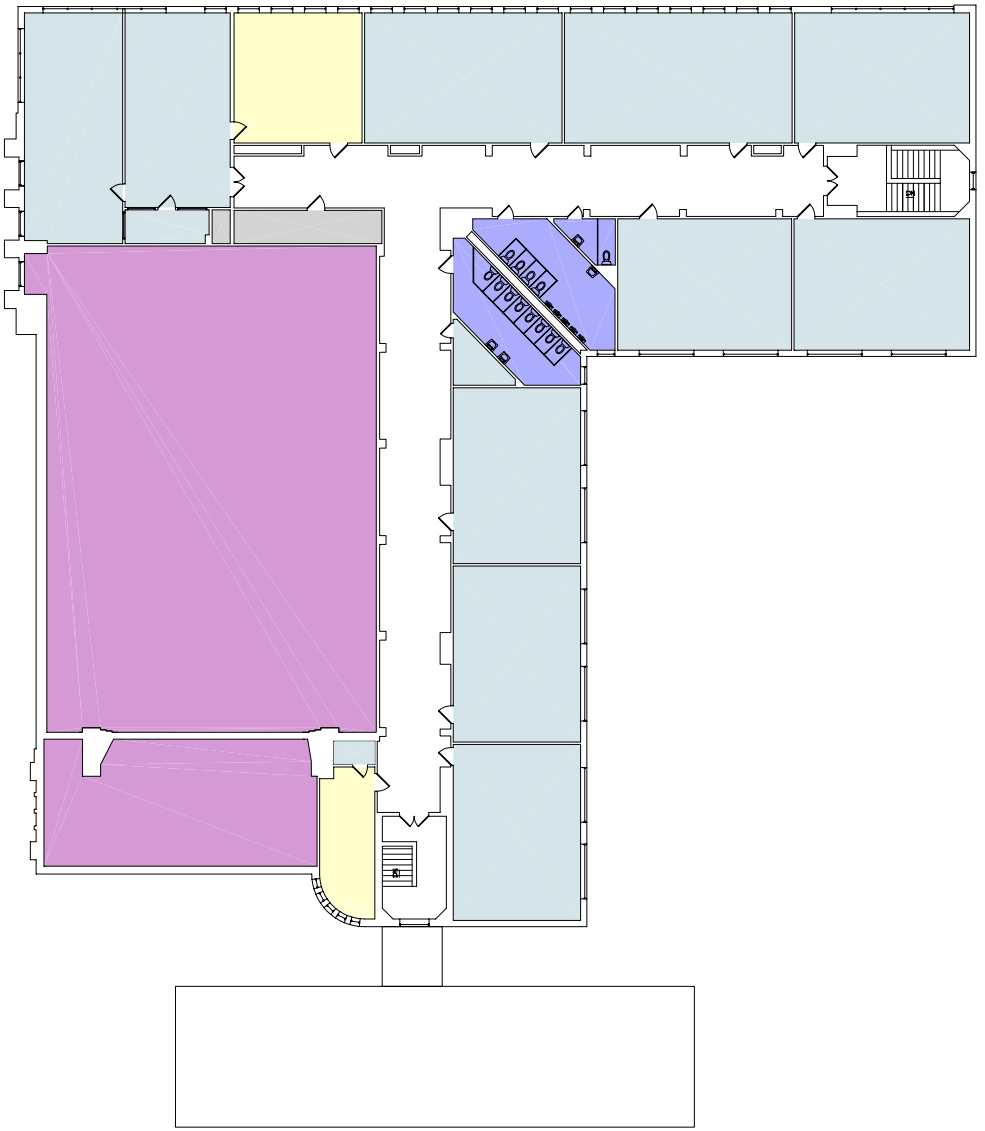
LEI ALTENAH ENGINEERING INC.

WKL ARCHITECTURE

WILKES-BARRE AREA SCHOOL DISTRICT

WILKES-BARRE TOWNSHIP MAINTENANCE BUILDING

DECEMBER 8, 2014



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Second Floor Plan

0' 20' 40'

WILKES-BARRE AREA SCHOOL DISTRICT

WILKES-BARRE TOWNSHIP MAINTENANCE BUILDING

DECEMBER 8, 2014

LEGEND

- CLASSROOMS
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Borton Lawson

Basement Plan

PROJECT NORTH

0' 20' 40'

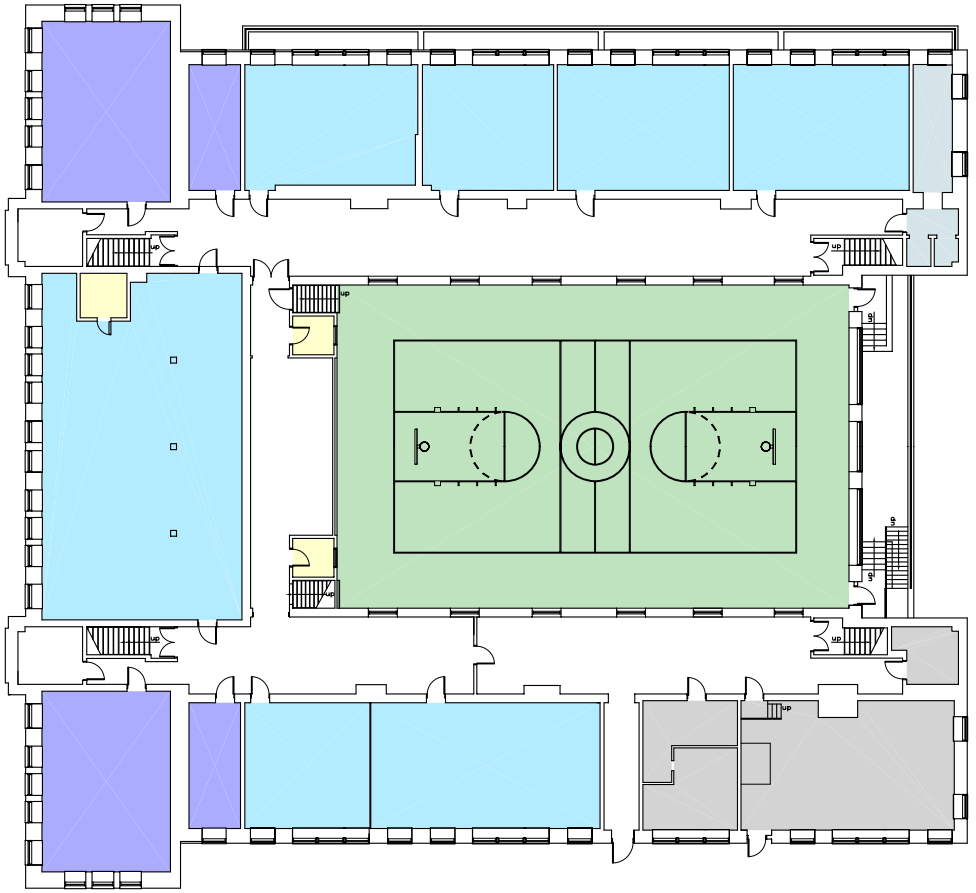
LEI

WKL ARCHITECTURE

WILKES-BARRE AREA SCHOOL DISTRICT

WILKES-BARRE TOWNSHIP MAINTENANCE BUILDING

DECEMBER 8, 2014



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Borton Lawson

LEI

WKL ARCHITECTURE

Basement & Gymnasium Floor Plan

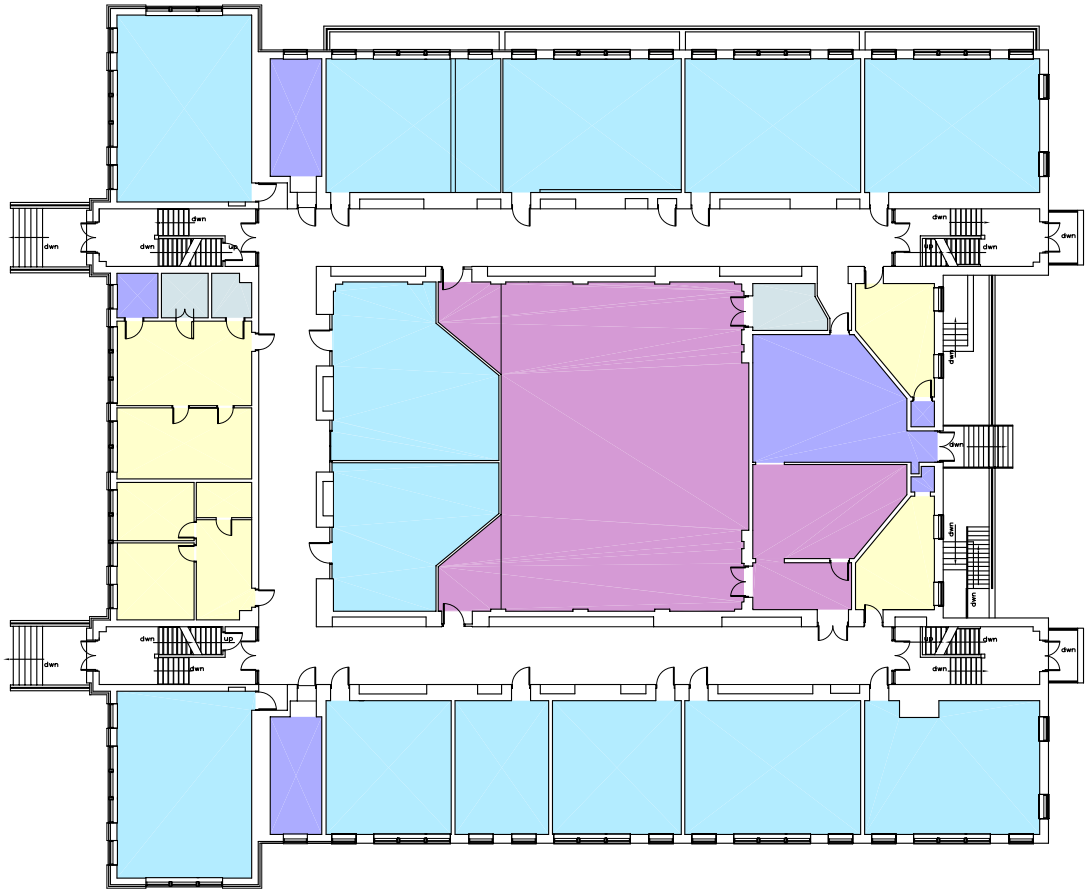
PROJECT NORTH

0' 20' 40'

WILKES-BARRE AREA SCHOOL DISTRICT

FORMER PLAINS JUNIOR HIGH SCHOOL

DECEMBER 8, 2014



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Borton Lawson ENGINEERING | ARCHITECTURE

LEI ALTOONA ENGINEERING, INC.

WKL ARCHITECTURE

Ground Floor Plan

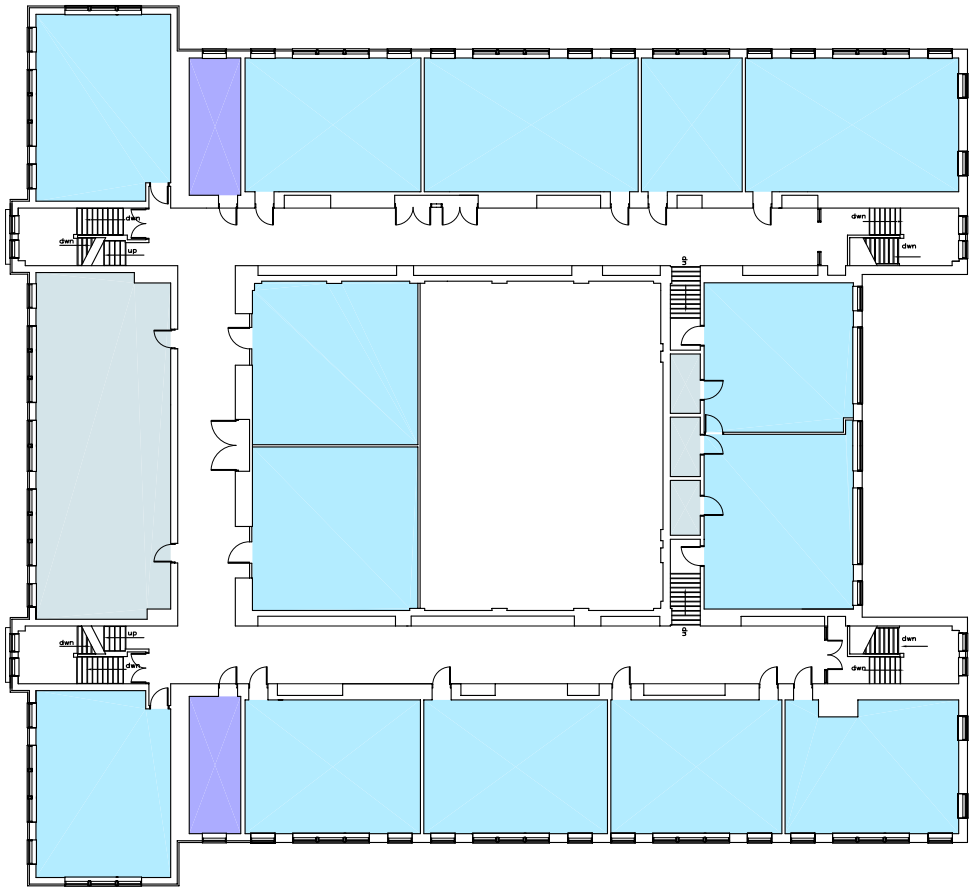
PROJECT NORTH

0' 20' 40'

WILKES-BARRE AREA SCHOOL DISTRICT

FORMER PLAINS JUNIOR HIGH SCHOOL

DECEMBER 8, 2014



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Borton Lawson

LEI

WKL ARCHITECTURE

Second Floor Plan

PROJECT NORTH

0' 20' 40'

WILKES-BARRE AREA SCHOOL DISTRICT

FORMER PLAINS JUNIOR HIGH SCHOOL

DECEMBER 8, 2014

Mechanical Equipment Service Life and Assessment Abbreviations & References

APPENDIX – MECHANICAL EQUIPMENT SERVICE LIFE REFERENCES

SERVICE LIFE OF SYSTEM COMPONENTS (ASHRAE APPLICATIONS HANDBOOK-2011):

ITEM:		YEARS:
Boilers (Cast Iron):		30 Years
Burner:		21 Years
Unit Heaters:		20 Years
Cast Iron Radiant Heaters:		18 Years
Ductwork:		20-30 Years
Insulation:		24 Years
Diffuser, Grilles, Registers:		27 Years
Fans-Ventilating Roof Mounted:		20 Years
Cooling Tower:		20 Years
Package Chiller:		20 Years
Pumps:	Base-Mounted	20 Years
	Pipe-Mounted	10 Years
	Condensate	15 Years
Electric:	Motors :	18 Years
	Starters:	17 Years
Controls (Pneumatic):		20 Years
Valve Activators (Pneumatic)		20 Years
Air Compressor:		15 Years

ESTIMATED USEFUL LIVES OF HVAC EQUIPMENT (AMERICAN HOSPITAL ASSOCIATION):

ITEM:	YEARS:
Boiler smokestack, metal:	15
Heating, ventilating, and air conditioning system:	20
Boiler:	20
Compressor, air:	15
Condensate tank:	10
Condenser:	15
Controls:	15
Cooling Tower (Metal):	15
Duct work:	20
Furnace, domestic type:	15
Oil storage tank:	20
Piping:	25
Pump:	15
Radiator, cast iron:	25
Radiator, finned tube:	18
Unit heater:	10
Pneumatic tube system:	15

APPENDIX – MECHANICAL ASSESSMENT ABBREVIATIONS & REFERENCES

ABBREVIATIONS:

- ASHRAE ---- American Society of Heating Refrigeration and Air Conditioning Engineers
- IBC ---------- International Building Code
- IFGC --------- International Fuel Gas Code
- IMC ---------- International Mechanical Code
- L&I ----------Department of Labor and Industry, PA

REFERENCES:

- ASHRAE Applications Handbook (2003 through 2011)
- Assessment report for Meyers and Coughlin High Schools Date 3-2009 by Highland Associates
- Assessment report for Meyers, GAR, Coughlin High Schools Date 8-2002 by Ed Vise (division of Hayes Large Architects)

Energy Portfolio Surveys

APPENDIX – ENERGY PORTFOLIO SURVEYS

An Energy Portfolio Survey has been completed for the existing buildings operated by the District and for each option.

A summary of the Energy Star ® Statement of Energy Performance for the for the year ending April 30, 2014 is listed below.

School	Property I.D. No.	Function	Gross Floor Area ft^2	Year Built	Site EUI kBtu/ft^2	Source EUI kBtu/ft^2	Electric kBtu	Nat. Gas kBtu	Emissions CO2e/yr
Coughlin	4157648	K-12	179,972	1925	91,070	95,644	1,762,776	16,388,302,856	870,697
Meyers	4154126	K-12	260,587	1930	101,833	106,944	2,497,891	26,533,797,037	1,409,671
GAR	4156579	K-12	203,154	1925	59,267	62,275	4,342,726	12,036,005,954	639,872
Solomon Comp.	4162787	K-12	202,579	1996	32,507	34,191	5,687,817	6,579,614,295	350,236
Dan Flood	4158027	K-12	71,083	1968	48	143	3,128,700	307,800	435
Dodson	4157835	K-12	53,623	1938	71,354	74,953	797,225	3,825,414,415	203,293
Kistler	4158254	K-12	150,764	1974	58,221	61,215	6,012,690	8,771,556,388	466,704
Heights	4162848	K-12	109,661	1976	23,344	24,575	3,385,984	2,556,496,618	136,241
Mackin	4162823	K-12	52,450	1934	112	119	38,295	5,848,200	316
Admin. Bldg.	4178538	K-12	22,577	1930	121,977	128,114	404,233	2,753,476,424	146,304
Maint. Bldg.	4178678	K-12	40,523	1940	70,943	74,510	382,506	2,874,441,735	152,727

Option	Property I.D. No.	Function	Gross Floor Area ft^2	Year Built	Site EUI kBtu/ft^2	Source EUI kBtu/ft^2	Energy Costs (Est.)	Emissions CO2e/yr
New High School	4261964	K-12	245,000	N/A	80	31373581	284680	1459
New Middle School	4261959	K-12	203,154	N/A	72	23503211	213265	1093
Temp. High School	4260814	K-12	52,450	N/A	95	8001224	72602	372
Consolidated High	4260526	K-12	410,000	N/A	96	63186517	573346	2939
High School	4261960	K-12	225,000	N/A	78	28001577	254082	1302

Phase 1 Review of Select Sites

PHASE I ENVIRONMENTAL SITE ASSESSMENT
COUGHLIN HIGH SCHOOL
180 N. WASHINGTON STREET
WILKES-BARRE, LUZERNE COUNTY, PENNSYLVANIA

EXECUTIVE SUMMARY

Borton-Lawson (BL) performed a Phase I Environmental Site Assessment (ESA) on the Coughlin High School property ("the subject site") located at 180 N. Washington Street, Wilkes-Barre, Luzerne County, Pennsylvania. The following is a summary of our findings and is not intended to replace more detailed information contained elsewhere in the Phase I ESA report.

Based upon information collected during this Phase I ESA, the subject site consists of two (2) parcels totaling approximately 2.5± acres, that are the location of Coughlin High School. The parcel consists of three (3) buildings with a total square footage of approximately 171,350 square feet. The subject site has been used as a high school since it was built in 1909.

A review of federal and state environmental databases identified no environmental incidents listed for the subject site. Thirteen (13) leaking underground storage tank (LUST) cases and other potential environmental incidents were identified for properties within approximately ½ mile of the subject site. Each of these sites is not anticipated to affect the environmental integrity of the subject site.

Based on the results of the Phase I ESA, as detailed in the Phase I ESA report, which included a site reconnaissance, review of regulatory records, review of historical information, site interviews and information provided by the User, inquiry into the subject site has identified conditions which indicate the potential for previous releases of hazardous substances on, at, in or to the subject site.

Based on the results of our site reconnaissance, review of regulatory records, review of historical information and interviews, the following conditions were found in connection with the subject site:

Recognized Environmental Conditions

BL identified one (1) recognized environmental condition (REC) during completion of the Phase I ESA for the subject site:

- An approximate 10,000-gallon underground storage tank (UST) containing fuel oil is used for secondary heating of the main school building. According to available records, the tank was installed in 1994 and has been in service for approximately 20 years. Based on the age of the tank, it should be anticipated to be nearing the end of its service life. The structural integrity of the tank should be inspected and it should be replaced if deemed necessary. BL recommends replacing the tank with a new system that includes a double-walled tank and appropriate leak detection systems according to manufacturer and regulatory guidelines.

Controlled Recognized Environmental Conditions

BL did not identify any controlled recognized environmental conditions (HREC) during completion of the Phase I ESA for the subject site.

Historical Recognized Environmental Conditions

BL did not identify any historical recognized environmental conditions (HREC) during completion of the Phase I ESA for the subject site.

De Minimis Conditions

The following De Minimis conditions were observed during completion of the site reconnaissance:

- BL observed several hazardous substances mainly in storage areas in the basement and custodial closets throughout the building. Materials included miscellaneous paints, paint thinners and cleaning agents. These hazardous substances were contained in mainly household-sized quantities, properly labeled and stored in secure locations in order to avoid a potential release. The paints, paint thinners and cleaners ranged in size from one quart to 5-gallons.

Non-ASTM Scope Conditions

The following Non-ASTM conditions were observed during completion of the site reconnaissance:

- BL observed the presence of suspect asbestos containing building materials (ACBM) throughout the subject site. Suspect ACBM included floor tile, drywall, mastics and ceiling tile. Based on the age of construction, lead based paint (LBP) may also be present.

  Previous inspections have been conducted by others according to Asbestos Hazard Emergency Response Act (AHERA) requirements and confirmed the presence of ACBM. In order to insure compliance with all applicable federal, state and local regulations, BL recommends a limited hazardous materials building survey to confirm quantities of hazardous materials including the identification and confirmation of ACBM and lead painted surfaces be conducted prior to any future demolition or renovation activities.

Based on the results of the Phase I ESA, as detailed in the report, which included a site reconnaissance, review of regulatory records, review of historical information, site interviews and information provided by the User, inquiry into the subject site has identified conditions which indicate the potential for previous releases of hazardous substances in, on or at the subject site. The structural integrity of the underground storage tank should be inspected to determine the potential for a release of contamination to the subject site and the possible need for a subsurface investigation as part of a Phase II ESA.

PHASE I ENVIRONMENTAL SITE ASSESSMENT
G.A.R JR./SR. HIGH SCHOOL
250 S. GRANT STREET
WILKES-BARRE, LUZERNE COUNTY, PENNSYLVANIA

EXECUTIVE SUMMARY

Borton-Lawson (BL) performed a Phase I Environmental Site Assessment (ESA) on the G.A.R. Jr./Sr. High School property ("the subject site") located at 250 S. Grant Street, Wilkes-Barre, Luzerne County, Pennsylvania. The following is a summary of our findings and is not intended to replace more detailed information contained elsewhere in the Phase I ESA report.

Based upon information collected during this Phase I ESA, the subject site consists of an approximate 4.83± acre parcel that is the location of G.A.R. Jr./Sr. High School. The parcel consists of three (3) buildings with a total square footage of approximately 168,240 square feet. The subject site had been used as a secondary school since it was built in 1925.

A review of federal and state environmental databases identified no environmental incidents listed for the subject site. Four (4) leaking underground storage tank (LUST) cases and other potential environmental incidents were identified for properties within approximately ½ mile of the subject site. Each of these sites is not anticipated to affect the environmental integrity of the subject site.

Based on the results of the Phase I ESA, as detailed in the Phase I ESA report, which included a site reconnaissance, review of regulatory records, review of historical information, site interviews and information provided by the User, inquiry into the subject site has identified conditions which indicate the potential for previous releases of hazardous substances on, at, in or to the subject site.

Based on the results of our site reconnaissance, review of regulatory records, review of historical information and interviews, the following conditions were found in connection with the subject site:

Recognized Environmental Conditions

BL identified one (1) recognized environmental condition (REC) during completion of the Phase I ESA for the subject site.

- An approximate 3,000-gallon underground storage tank (UST) containing fuel oil is used for secondary heating of the building. According to available records, the tank was installed in 1994 and has been in service for approximately 20 years. Based on the age of the tank, it should be anticipated to be nearing the end of its service life. The structural integrity of the tank should be inspected and it should be replaced if deemed necessary. BL recommends replacing the tank with a new system that includes a double-walled tank and appropriate leak detection systems according to manufacturer and regulatory guidelines.

Controlled Recognized Environmental Conditions

BL did not identify any controlled recognized environmental conditions (HREC) during completion of the Phase I ESA for the subject site.

Historical Recognized Environmental Conditions

BL did not identify any historical recognized environmental conditions (HREC) during completion of the Phase I ESA for the subject site.

De Minimis Conditions

The following De Minimis conditions were observed during completion of the site reconnaissance:

- BL observed several hazardous substances mainly in storage rooms in the basement and custodial closets throughout the building. Materials included miscellaneous paints, paint thinners and cleaning agents. These hazardous substances were contained in mainly household-sized quantities, properly labeled and stored in secure locations in order to avoid a potential release. The paints, paint thinners and cleaners ranged in size from one quart to 5-gallons.
- Three (3) single pole-mounted transformers on the streets around the school along Sherman St., Lehigh St. and S. Grant St. No apparent visual evidence of stains, leaks or releases were observed on the exterior of the transformers. Determination was not made as to whether the transformer contained PCBs. The transformers are the property of PP&L Corporation and the removal and disposal of the transformer would be their responsibility.

Non-ASTM Scope Conditions

The following Non-ASTM conditions were observed during completion of the site reconnaissance:

- BL observed the presence of suspect asbestos containing building materials (ACBM) throughout the subject site. Suspect ACBM included floor tile, drywall, mastics, and ceiling tile. Based on the age of construction, lead based paint (LBP) may also be present.

  Previous inspections have been conducted by others according to Asbestos Hazard Emergency Response Act (AHERA) requirements and confirmed the presence of ACBM. In order to insure compliance with all applicable federal, state and local regulations, BL recommends a limited hazardous materials building survey to confirm quantities of hazardous materials including the identification and confirmation of ACBM and lead painted surfaces be conducted prior to any future demolition or renovation activities.

Based on the results of the Phase I ESA, as detailed in the report, which included a site reconnaissance, review of regulatory records, review of historical information, site interviews and information provided by the User, inquiry into the subject site has identified conditions which indicate the potential for previous releases of hazardous substances in, on or at the subject site. Therefore, no further investigation (i.e. a Phase II ESA) into the environmental integrity of the subject site would be constituted at this time The structural integrity of the underground storage tank should be inspected to determine the potential for a release of contamination to the subject site and the possible need for a subsurface investigation as part of a Phase II ESA.

PHASE I ENVIRONMENTAL SITE ASSESSMENT
MEYERS JR./SR. HIGH SCHOOL
341 CAREY AVENUE
WILKES-BARRE, LUZERNE COUNTY, PENNSYLVANIA

EXECUTIVE SUMMARY

Borton-Lawson (BL) performed a Phase I Environmental Site Assessment (ESA) on the former Audubon School property ("the subject site") located at 341 Carey Avenue, Wilkes-Barre, Luzerne County, Pennsylvania. The following is a summary of our findings and is not intended to replace more detailed information contained elsewhere in the Phase I ESA report.

Based upon information collected during this Phase I ESA, the subject site consists of an approximate 7.73± acre parcel that is the location of the Meyers Jr./Sr. High school. The parcel consists of one (1) building with a total square footage of approximately 232,220 square feet. The subject site had been used as a secondary school since it was built in 1930.

A review of federal and state environmental databases identified one (1) environmental incident listed for the subject site. Nine (9) leaking underground storage tank (LUST) cases and other potential environmental incidents were identified for properties within approximately ½ mile of the subject site. Each of these sites is not anticipated to affect the environmental integrity of the subject site.

Based on the results of the Phase I ESA, as detailed in the Phase I ESA report, which included a site reconnaissance, review of regulatory records, review of historical information, site interviews and information provided by the User, inquiry into the subject site has identified conditions which indicate the potential for previous releases of hazardous substances on, at, in or to the subject site.

Based on the results of our site reconnaissance, review of regulatory records, review of historical information and interviews, the following conditions were found in connection with the subject site:

Recognized Environmental Conditions

BL identified one (1) recognized environmental condition (REC) during completion of the Phase I ESA for the subject site.

- An approximate 3,000-gallon underground storage tank (UST) containing fuel oil is used for secondary heating of the building. According to available records the tank was installed in 1994 and has been in service for approximately 20 years. Based on the age of the tank, it should be anticipated to be nearing the end of its service life. The structural integrity of the tank should be inspected and it should be replaced if deemed necessary. BL recommends replacing the tank with a new system that includes a double-walled tank and appropriate leak detection systems according to manufacturer and regulatory guidelines.

Controlled Recognized Environmental Conditions

BL did not identify any controlled recognized environmental conditions (HREC) during completion of the Phase I ESA for the subject site.

Historical Recognized Environmental Conditions

BL identified one (1) historical recognized environmental condition (HREC) during completion of the Phase I ESA for the subject site.

- During the removal of a 6,000-gallon UST in late 1994, soil contamination was discovered in the area near the fill port. The contaminated soil was removed and clean stone was added to the excavated area when the new tank was installed. No additional investigation into the subject site was required at the time.

De Minimis Conditions

The following De Minimis conditions were observed during completion of the site reconnaissance:

- BL observed several hazardous substances mainly in storage areas in the basement and custodial closets throughout the building. Materials included miscellaneous paints, paint thinners and cleaning agents. These hazardous substances were contained in mainly household-sized quantities, properly labeled and stored in secure locations in order to avoid a potential release. The paints, paint thinners and cleaners ranged in size from one quart to 5-gallons.
- Four (4) tri pole-mounted transformers were located on the streets around the school along Carey Ave., Hanover St. and Old River Rd. No apparent visual evidence of stains, leaks or releases were observed on the exterior of the transformers. Determination was not made as to whether the transformer contained PCBs. The transformers are the property of PP&L Corporation and the removal and disposal of the transformer would be their responsibility.

Non-ASTM Scope Conditions

The following Non-ASTM conditions were observed during completion of the site reconnaissance:

- BL observed the presence of suspect asbestos containing building materials (ACBM) throughout the subject site. Suspect ACBM included floor tile, drywall, mastics, window glazing and ceiling tile. Based on the age of construction, lead based paint (LBP) may be present.

  Previous inspections conducted by others according to Asbestos Hazard Emergency Response Act (AHERA) requirements and have confirmed the presence of ACBM. In order to insure compliance with all applicable federal, state and local regulations, BL recommends a hazardous materials building survey including the identification and confirmation of ACBM and lead painted surfaces prior to any future demolition or renovation activities.

Based on the results of the Phase I ESA, as detailed in the report, which included a site reconnaissance, review of regulatory records, review of historical information, site interviews and information provided by the User, inquiry into the subject site has identified conditions which indicate the potential for previous releases of hazardous substances in, on or at the subject site. Therefore, no further investigation (i.e. a Phase II ESA) into the environmental integrity of the subject site would be constituted at this time The structural integrity of the underground storage tank should be inspected to determine the potential for a release of contamination to the subject site and the possible need for a subsurface investigation as part of a Phase II ESA.

PHASE I ENVIRONMENTAL SITE ASSESSMENT
SOLOMON ATHLETIC FIELDS
43 ABBOTT STREET
WILKES-BARRE CITY & PLAINS TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

EXECUTIVE SUMMARY

Borton-Lawson (BL) performed a Phase I Environmental Site Assessment (ESA) on the Solomon Athletic Fields ("the subject site"), located at 43 Abbott Street, in Wilkes-Barre City and Plains Township, Luzerne County, Pennsylvania. The following is a summary of our findings and is not intended to replace more detailed information contained elsewhere in the Phase I ESA report.

Based upon information collected during this Phase I ESA, the subject site consists of an approximate 22.75± acre parcel that is the location of the athletic fields for the Solomon Junior High School and related field house. The parcel consists of one (1) building with a total square footage of approximately 187,879 square feet. The subject site has been used as athletic fields for the adjoining junior high school since the associated school was built in 1997.

A review of federal and state environmental databases identified no environmental incidents listed for the subject site. Seventeen (17) leaking underground storage tank (LUST) cases and other potential environmental incidents were identified for properties within approximately ½ mile of the subject site. Each of these sites is not anticipated to affect the environmental integrity of the subject site.

Based on the results of the Phase I ESA, as detailed in the Phase I ESA report, which included a site reconnaissance, review of regulatory records, review of historical information, site interviews and information provided by the User, inquiry into the subject site has not identified conditions which indicate the potential for previous releases of hazardous substances on, at, in or to the subject site.

Based on the results of our site reconnaissance, review of regulatory records, review of historical information and interviews, the following conditions were found in connection with the subject site:

Recognized Environmental Conditions

BL did not identify any recognized environmental conditions (REC) during completion of the Phase I ESA for the subject site.

Controlled Recognized Environmental Conditions

BL did not identify any controlled recognized environmental conditions (HREC) during completion of the Phase I ESA for the subject site.

Historical Recognized Environmental Conditions

BL did not identify any historical recognized environmental conditions (HREC) during completion of the Phase I ESA for the subject site.

De Minimis Conditions

The following De Minimis conditions were observed during completion of the site reconnaissance:

- BL observed several hazardous substances in storage area and garage of the field house. Materials included miscellaneous cleaning agents and chemicals for maintaining the landscaping equipment. These hazardous substances were contained in mainly household-sized quantities, properly labeled and stored in secure locations in order to avoid a potential release.

Non-ASTM Scope Conditions

BL did not identify any Non-ASTM conditions during completion of the site reconnaissance.

Based on the results of the Phase I ESA, as detailed in the report, which included a site reconnaissance, review of regulatory records, review of historical information, site interviews and information provided by the User, inquiry into the subject site has not identified conditions which indicate the potential for previous releases of hazardous substances in, on or at the subject site. Therefore, no further investigation (i.e. a Phase II ESA) into the environmental integrity of the subject site would be constituted at this time.

PHASE I ENVIRONMENTAL SITE ASSESSMENT
EMPIRE STREET PROPERTY
SOUTH EMPIRE STREET
WILKES-BARRE TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

EXECUTIVE SUMMARY

Borton-Lawson (BL) performed a Phase I Environmental Site Assessment (ESA) on the Empire Street property ("the subject site") located adjacent to South Empire Street in Wilkes-Barre Township, Luzerne County, Pennsylvania. The following is a summary of our findings and is not intended to replace more detailed information contained elsewhere in the Phase I ESA report.

Based upon information collected during this Phase I ESA, the subject site consists of approximately 37.34± acres of land that is comprised of one (1) parcel that is currently the location of vacant, undeveloped land that was previously used to stockpile coal or coal-related material.

A review of federal and state environmental databases identified no environmental incidents listed for the subject site. Twenty-one (21) leaking underground storage tank (LUST) cases and other potential environmental incidents were identified for properties within approximately ½ mile of the subject site. Most of these sites are not anticipated to affect the environmental integrity of the subject site.

Based on the results of the Phase I ESA, as detailed in the Phase I ESA report, which included a site reconnaissance, review of regulatory records, review of historical information, site interviews and information provided by the User, inquiry into the subject site has identified conditions which indicate the potential for previous releases of hazardous substances on, at, in or to the subject site.

Based on the results of our site reconnaissance, review of regulatory records, review of historical information and interviews, the following conditions were found in connection with the subject site:

Recognized Environmental Conditions

BL identified one (1) recognized environmental condition (REC) during completion of the Phase I ESA for the subject site.

- An automobile junkyard on the adjoining to property to the south of the subject site has significantly encroached into the boundaries of the subject site. A substantial number of old vehicles and vehicle parts have been stored in portions of the junkyard throughout the southern areas of the subject site.

Controlled Recognized Environmental Conditions

BL did not identify any controlled recognized environmental conditions (CREC) during completion of Phase I ESA within the boundaries of the subject site.

Historical Recognized Environmental Conditions

BL identified one (1) historical recognized environmental condition (HREC) during completion of the Phase I ESA for the subject site.

- Based on prior use of the subject site by coal related operations and the industrial nature of the coal industry, there is a potential for contamination to be present on the subject site.

De Minimis Conditions

BL identified one (1) de minimis conditions on the subject site:

- Party remains, household garbage and piles of construction debris were observed throughout the site during the site reconnaissance.

- Three (3) single pole-mounted transformers on Empire Street along the northwestern boundary of the subject site. No apparent visual evidence of stains, leaks or releases were observed on the exterior of the transformers. Determination was not made as to whether the transformer contained PCBs. The transformers are the property of PP&L Corporation and the removal and disposal of the transformer would be their responsibility.

Non-ASTM Scope Conditions

The following Non-ASTM conditions were observed during completion of the site reconnaissance:

- BL observed the presence of potential watercourses within the boundaries of the subject site. BL recommends that a watercourse and wetland delineation of the property be conducted prior to any proposed future development of the site.

Based on the results of the Phase I ESA, as detailed in the report, which included a site reconnaissance, review of regulatory records, review of historical information, site interviews and information provided by the User, inquiry into the subject site has identified conditions which indicate the potential for previous releases of hazardous substances in, on or at the subject site. Due to the conditions identified at the subject site BL recommends further investigation (i.e. Phase II ESA) into the environmental integrity of the subject site be conducted to determine the nature and extent of potential contamination that may be present.

PHASE I ENVIRONMENTAL SITE ASSESSMENT
PAGNOTTI/LOREE PROPERTY
SOUTH MAIN STREET (SR 2022)
PLAINS TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

EXECUTIVE SUMMARY

Borton-Lawson (BL) performed a Phase I Environmental Site Assessment (ESA) on the Pagnotti/Loree property ("the subject site") located off of North Main Street in Plains Township, Luzerne County, Pennsylvania. The following is a summary of our findings and is not intended to replace more detailed information contained elsewhere in the Phase I ESA report.

Based upon information collected during this Phase I ESA, the subject site consists of approximately 141.98± acres of land that is comprised of two (2) parcels that are currently the location of vacant, undeveloped land that was previously used to stockpile coal or coal-related material.

A review of federal and state environmental databases identified no environmental incidents listed for the subject site. Twenty (20) leaking underground storage tank (LUST) cases and other potential environmental incidents were identified for properties within approximately ½ mile of the subject site. Each of these sites are not anticipated to affect the environmental integrity of the subject site.

Based on the results of the Phase I ESA, as detailed in the Phase I ESA report, which included a site reconnaissance, review of regulatory records, review of historical information, site interviews and information provided by the User, inquiry into the subject site has identified conditions which indicate the potential for previous releases of hazardous substances on, at, in or to the subject site.

Based on the results of our site reconnaissance, review of regulatory records, review of historical information and interviews, the following conditions were found in connection with the subject site:

Recognized Environmental Conditions

BL did not identify any recognized environmental conditions (REC) during completion of the Phase I ESA for the subject site.

Controlled Recognized Environmental Conditions

BL did not identify any controlled recognized environmental conditions (CREC) during completion of Phase I ESA within the boundaries of the subject site.

Historical Recognized Environmental Conditions

BL identified one (1) historical recognized environmental conditions (HREC) during completion of the Phase I ESA for the subject site.

- Based on prior use of the subject site by coal related operations and the industrial nature of the coal industry, there is a potential for contamination to be present on the subject site.
- Abandoned concrete foundations and building remnants are located on the subject site, possibly from past coal industry related operations.

De Minimis Conditions

BL identified one (1) de minimis conditions on the subject site:

- Party remains, household garbage and construction debris were observed throughout the site during the site reconnaissance.

Non-ASTM Scope Conditions

The following Non-ASTM conditions were observed during completion of the site reconnaissance:

- BL observed the presence of potential wetlands and watercourses within the boundaries of the subject site. BL recommends that a watercourse and wetland delineation of the property be conducted prior to any proposed future development of the site.

Based on the results of the Phase I ESA, as detailed in the report, which included a site reconnaissance, review of regulatory records, review of historical information, site interviews and information provided by the User, inquiry into the subject site has identified conditions which indicate the potential for previous releases of hazardous substances in, on or at the subject site. Due to the conditions identified at the subject site BL recommends further investigation (i.e. Phase II ESA) into the environmental integrity of the subject site be conducted to determine the nature and extent of potential contamination that may be present.

PHASE I ENVIRONMENTAL SITE ASSESSMENT
SINIAWA PROPERTY
EAST ROSS STREET
WILKES-BARRE, LUZERNE COUNTY, PENNSYLVANIA

EXECUTIVE SUMMARY

Borton-Lawson (BL) performed a Phase I Environmental Site Assessment (ESA) on the Siniawa property ("the subject site") located on East Ross Street in the City of Wilkes-Barre, Luzerne County, Pennsylvania. The following is a summary of our findings and is not intended to replace more detailed information contained elsewhere in the Phaser I ESA report.

Based upon information collected during this Phase I ESA, the subject site consists of approximately 11.63± acres of land that is comprised of four (4) parcels that are currently the location of two (2) abandoned buildings and a vacant lot where a third building was previously razed. The property was site of the former Hazard Wire and Rope Company manufacturing facility.

A review of federal and state environmental databases identified no environmental incidents listed for the subject site. Twenty-seven (27) leaking underground storage tank (LUST) cases and other potential environmental incidents were identified for properties within approximately ½ mile of the subject site. Each of these sites are not anticipated to affect the environmental integrity of the subject site.

Based on the results of the Phase I ESA, as detailed in the Phase I ESA report, which included a site reconnaissance, review of regulatory records, review of historical information, site interviews and information provided by the User, inquiry into the subject site has identified conditions which indicate the potential for previous releases of hazardous substances on, at, in or to the subject site.

Based on the results of our site reconnaissance, review of regulatory records, review of historical information and interviews, the following conditions were found in connection with the subject site:

Recognized Environmental Conditions

BL identified one (1) recognized environmental condition (REC) during completion of the Phase I ESA for the subject site.

- There is a likely presence of contamination from potential previous releases of hazardous substances or petroleum products due to the industrial nature of the past uses of the subject site.

Controlled Recognized Environmental Conditions

BL did not identify any controlled recognized environmental conditions (CREC) during completion of Phase I ESA within the boundaries of the subject site.

Historical Recognized Environmental Conditions

BL identified one (1) historical recognized environmental conditions (HREC) during completion of the Phase I ESA for the subject site.

- Based on prior use of the property for industrial manufacturing operations, there is a potential for contamination to be present on the subject site.

De Minimis Conditions

BL identified one (1) de minimis conditions on the subject site:

- Party remains, household garbage and construction debris were observed throughout the site during the site reconnaissance.
- One (1) single pole-mounted transformer is on South Pennsylvania Avenue near the northern boundary of the subject site. No apparent visual evidence of stains, leaks or releases were observed on the exterior of the transformers. Determination was not made as to whether the transformer contained PCBs. The transformers are the property of PP&L Corporation and the removal and disposal of the transformer would be their responsibility.

Non-ASTM Scope Conditions

The following Non-ASTM conditions were observed during completion of the site reconnaissance:

- Based on the age of the building, asbestos containing building materials (ACBM) and lead based paint (LBP) may be present on the subject site. BL recommends a hazardous materials survey be conducted prior to any future renovation or demolition activities of the structures located on the site.

Based on the results of the Phase I ESA, as detailed in the report, which included a site reconnaissance, review of regulatory records, review of historical information, site interviews and information provided by the User, inquiry into the subject site has identified conditions which indicate the potential for previous releases of hazardous substances in, on or at the subject site. Due to the conditions identified at the subject site BL recommends further investigation (i.e. Phase II ESA) into the environmental integrity of the subject site be conducted to determine the nature and extent of contamination that may be present.

Meyers High School

ACM Type	Approximate Quantity	Abatement Cost Estimation	
		Unit Rate	Total Cost
Hard pipe insulation	2,540 LF	$12.00/LF	$30,480.00
Hard pipe fitting insulation	650 ea	$20.00/LF	$13,000.00
Fire doors	120 ea	$40.00/ea	$4,800.00
12”x12” Floor tile	45,075 SF	$2.00/SF	$90,150.00
12”x12” Floor tile mastic	45,075 SF	$2.00/SF	$90,150.00
Spray applied fireproofing	500 SF	$10.00/SF	$5,000.00
Black tar type coating	Unknown	N/A	N/A
Plaster patch	10 SF	$10.00/SF	$1,000.00
Kiln material	2 ea	$1,000/ea	$2,000.00
Transite panels	250 SF	$10.00/SF	$2,500.00
Acoustical insulation	7,500 SF	$10.00/SF	$75,000.00
9”x9” Floor tile	39,920 SF	$2.00/SF	$79,840.00
9”x9” Floor tile mastic	39,920 SF	$2.00/SF	$79,840.00
Cloth wire covering	10 ea	$25.00/ea	$250.00
Hot water tank insulation	1000 SF	$10.00/SF	$10,000.00
Fume hood insulation	Unknown	N/A	N/A
Black tar type covering	Unknown	N/A	N/A
Chalkboard adhesive	Unknown	N/A	N/A
Mud packing	60 SF	$5.00/SF	$300.00
Mud drum & outer block insulation	500 SF	$10.00/SF	$5,000.00
Gaskets	10 SF	$10.00/SF	$100.00
Interior boiler insulation	Unknown	N/A	N/A
Loose block insulation	1 ea	$50.00/ea	$50.00
Window glazing	Unknown	N/A	N/A

ACM Type	Approximate Quantity	Abatement Cost Estimation	
		Unit Rate	Total Cost
Caulking	Unknown	N/A	N/A
Roofing material	Unknown	N/A	N/A
Total Estimated Abatement Cost			$489,460.00
Total Estimated Abatement Cost (x20% contingency)			**$587,442.00**

Coughlin High School

ACM Type	Approximate Quantity	Abatement Cost Estimation	
		Unit Rate	Total Cost
Ceiling plaster	120 SF	$10.00/SF	$1,200.00
Floor tile	42,000 SF	$2.00/SF	$84,000.00
Total Estimated Abatement Cost			$85,200.00
Total Estimated Abatement Cost (x25% contingency)			**$106,500.00**

GAR High School

ACM Type	Approximate Quantity	Abatement Cost Estimation	
		Unit Rate	Total Cost
Total Estimated Abatement Cost			$0.00.00
Total Estimated Abatement Cost (x25% contingency)			**$0.00.00**

Heights Murray Elementary School

ACM Type	Approximate Quantity	Abatement Cost Estimation	
		Unit Rate	Total Cost
Floor tile	18,000 SF	$2.00/SF	$36,000.00
Total Estimated Abatement Cost			$36,000.00
Total Estimated Abatement Cost (x25% contingency)			**$45,000.00**

Flood Elementary School

ACM Type	Approximate Quantity	Abatement Cost Estimation	
		Unit Rate	Total Cost
Ceiling plaster	18,000 SF	$8.00/SF	$144,000.00
Floor tile	18,000 SF	$2.00/SF	$36,000.00
Total Estimated Abatement Cost			$180,000.00
Total Estimated Abatement Cost (x25% contingency)			**$225,000.00**

Dodson Elementary School

ACM Type	Approximate Quantity	Abatement Cost Estimation	
		Unit Rate	Total Cost
Roofing material	1,400 SF	$10.00/SF	$14,000.00
Total Estimated Abatement Cost			$14,000.00
Total Estimated Abatement Cost (x25% contingency)			**$17,500.00**

Mackin Elementary School

ACM Type	Approximate Quantity	Abatement Cost Estimation	
		Unit Rate	Total Cost
Floor tile	8,000 SF	$2.00/SF	$16,000.00
Total Estimated Abatement Cost			$16,000.00
Total Estimated Abatement Cost (x25% contingency)			**$20,000.00**

Administrative Building

ACM Type	Approximate Quantity	Abatement Cost Estimation	
		Unit Rate	Total Cost
Floor tile	28,000 SF	$2.00/SF	$56,000.00
Total Estimated Abatement Cost			$56,000.00
Total Estimated Abatement Cost (x25% contingency)			**$70,000.00**

Maintenance Building*

ACM Type	Approximate Quantity	Abatement Cost Estimation	
		Unit Rate	Total Cost
Total Estimated Abatement Cost			$0.00.00
Total Estimated Abatement Cost (x25% contingency)			**$0.00.00**

Plains Junior High School*

ACM Type	Approximate Quantity	Abatement Cost Estimation	
		Unit Rate	Total Cost
Total Estimated Abatement Cost			$0.00.00
Total Estimated Abatement Cost (x25% contingency)			**$0.00.00**

Kistler Elementary School*

ACM Type	Approximate Quantity	Abatement Cost Estimation	
		Unit Rate	Total Cost
Total Estimated Abatement Cost			$0.00.00
Total Estimated Abatement Cost (x25% contingency)			**$0.00.00**

Solomon Elementary School/Solomon Plains Junior High School*

ACM Type	Approximate Quantity	Abatement Cost Estimation	
		Unit Rate	Total Cost
Total Estimated Abatement Cost			$0.00.00
Total Estimated Abatement Cost (x25% contingency)			**$0.00.00**

*Denotes no asbestos survey documentation was available for review by BL.