INTRODUCTION

The following facilities assessment is intended to document the physical condition of the existing Darlington High School and Elementary-Middle School buildings and the campus site for the purposes of master planning. Programmatic and space concerns are not a part of this assessment but will be evaluated as part of the master planning.

As we evaluate District facilities we compare them to how Hoffman would design and build new facilities today. For example we will point out items that "do not meet code", which references current building codes. The District’s buildings are *grandfathered* with regard to these code issues, meaning that the buildings are generally only required to meet the building codes in force at the time of the building’s original construction. Having said that, remodeled portions of existing buildings must be brought into compliance with today's building codes, and if that remodeling exceeds a certain percentage of the building’s area, the entire building must be made compliant.

Therefore since this master planning process may result in remodeling the existing facilities, this report identifies (as much as possible) items that do not comply with current building codes. The exact magnitude of changes required by the code varies greatly with the type and extent of the proposed remodeling. Further definition of any proposed remodeling is required to define exactly what changes are mandated by the codes.

We will also reference accessibility (handicapped) codes and the ADA (Americans with Disabilities Act), which are part of the building codes by reference. The ADA is a federal civil law governing handicapped accessibility that influences the building codes. ADA continues to be tested in the court system and as a result it is continuously evolving, modifying its prescriptive requirements for equal access. Unfortunately the building codes are slow to incorporate these changes (by design), meaning as a public building owner, you could be in full compliance with the accessibility requirements of the building code yet at the same time be in violation of the ADA (federal civil law). As building solutions are developed, we will identify these issues.

An important part of any school facility assessment includes surveys/interviews with a significant number of the staff members that utilize these buildings. It is very difficult, if not impossible, for anyone to walk through a given school building and completely understand the benefits and the challenges that these buildings present to their users. We have found these regular users provide valuable insights into the buildings they occupy. We have and will include this information into our understanding of the physical condition of these District buildings.
REPORT STRUCTURE

The Darlington Community School District serves a student population of approximately 790 (2013) students in grades K-12, not including off-campus community-based 4k programs. District buildings include Darlington Elementary-Middle School (DEMS) serving K-8, and Darlington High School (DHS) for grades 9-12, on a shared campus along with a number of (unevaluated) accessory structures.

This report focuses on the two primary buildings as described above; the evaluation will begin with a general statement about the buildings followed by specific details:

- Section 1 - Site (the Darlington campus)
- Section 2 - Structural components
- Section 3 - Architectural Components (Spaces and Interiors)
- Section 4 - Envelope (building enclosure)
- Section 5 - Fire Protection and Detection Systems
- Section 6 - Plumbing Systems
- Section 7 - Heating Ventilating and Air Conditioning Systems (HVAC)
- Section 8 - Electrical Systems
- Section 9 - Technology Systems

Each Section will be further subdivided into Existing Conditions about each category, any Observations from the walk through and concluding with Recommendations in each category.

Immediately following the floor plans is a Summary of Recommendations, taken directly from the more detailed report which follows the Executive Summary. The recommendations are provided with an eye towards simple maintenance projects assuming the buildings remain largely as-is; the master planning process will identify projects beyond that scope.
Hoffman study team members

At Hoffman, we require that our professional consultants participate in the building evaluation process and the writing of our facility assessment reports; the resultant report is much more accurate and comprehensive. As we work with your buildings and grounds committee during the master planning process, these consultants will also be involved to assure comprehensive, accurate cost estimating for any and all proposed modifications and additions.

- Section 1 - Site
  Mark Boehlke, Senior Land Planner and licensed Landscape Architect, Hoffman

- Sections 2, 3, 4 – Structural, Architectural, Envelope
  Todd Bushmaker, Licensed Project Architect, Hoffman

- Sections 5 and 6 - Fire Protection and Plumbing Systems
  Travis Bauer, Plumbing Designer, Romes Design Inc.

- Section 7 - Heating Ventilating and Air Conditioning Systems (HVAC)
  Jason Testin, Licensed Mechanical Engineer, Fredericksen Engineering

- Section 8 - Electrical Systems
  Scott Pautz, Licensed Electrical Engineer, Romes Design Inc.

- Section 9 - Technology Systems
  Mike Romes, Licensed Electrical Engineer and firm owner, Romes Design Inc.
Exclusions

This report includes casual observations of the site, food service facilities, possible extant hazardous materials, and performance spaces; however as the master planning process progresses towards more defined projects, Hoffman recommends the following:

Site – To more effectively determine the exact parameters, restrictions and capacities of the various site components, Hoffman recommends that the District hire a Civil Engineer or Licensed Land Surveyor to complete a full meets-and-bounds, utility and topographic survey of the Darlington campus. This will include information on any restricted wetlands or contaminated areas. Once a specific project has been identified, this engineer can be retained to provide site design services. Additionally, once areas of new construction are identified, Hoffman recommends the District hire a civil testing firm to create and analyze soil borings in appropriate locations on the site so we may assess the capacity of the soil for structural purposes.

Kitchen – To properly assess the capabilities and possible duplication of equipment at the two food service facilities, Hoffman recommends that the District hire a Food Service specialist to do a complete inventory, condition report, and operations analysis of your equipment and facilities. This should include staff involvement and observation of a typical daily routine. If the master planning process proposes new or renovated facilities, this specialist can be retained to provide design services.

Hazardous Materials – Hoffman personnel can make general observations about existing materials and help determine whether further expert testing and removal might be required. We will then recommend the District hire a certified hazardous material testing and abatement firm to carry out identification and removal (if necessary) of asbestos, mold, lead, or mercury-containing materials.

Acoustics / Audio / Theater Lighting – To properly assess the acoustical, audio and specialty lighting capabilities of any performance spaces, including the gymnasiums / stage as well as the auditorium and large group rooms, Hoffman suggests a full analysis by a certified Audio-Visual specialist. This analysis can be included in any design services required in the event that master planning proposes any new or remodeled spaces of this type.

Hoffman has worked with many such firms in the past and would be happy to assist with the selection process.
EXECUTIVE SUMMARY

The Darlington High School building (DHS) has been found to be in good condition overall, with some issues typical of a facility that’s fifty years old. A good maintenance program has taken care of many expected issues over the years, including equipment replacement, flooring replacement, data infrastructure, etc. However some large projects remain, which could be rolled into any anticipated referendum because they might be difficult to fund through the regular maintenance budget. Ventilation and air conditioning systems replacement and addition, roofing, sports fields, and space needs come to mind. Irrespective of any remodeling required for programmatic reasons, high points are listed below.

The Elementary-Middle School building (DEMS) is less than twenty years old and is unsurprisingly in very good condition. Again, maintenance has kept up with repair and replacement needs so this list is relatively short.

Site Analysis

- Restripe accessible parking stalls to correct requirements.
- Consider addressing site entry, traffic flow and separation, and parking areas as part of any larger project.
- Consider adding building identification and traffic signage, dumpster enclosures, and flagpole illumination.
- Relocate and improve the varsity baseball diamond.
- With local authorities, consider improvements to Center Hill Road.
- Consider adjacent property acquisition to help address campus needs.

Structure

- Monitor previously repaired areas of masonry for any further movement.

Architecture

- Address accessibility issues at both schools, including restroom access and configuration, mezzanine and stage access, signage, clutter, door hardware, bleacher and auditorium seating areas, etc.
- Add fire suppression to the kitchen hoods.
- Complete a hazardous material survey and, if necessary, remediation.
- Verify and correct any non-continuous fire separations, including door openings and thru-wall penetrations.
- Improve circulation to the DHS Ag Shop.
- Consider replacing chalkboards with whiteboards.
- Assure proper safety equipment is available in the science labs.
- Consider re-adding energy-saving vestibules at DHS.
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Envelope
- Repair and/or repaint any exterior hollow metal doors as required.  
- Clean stained masonry walls.  
- Repair or replace damaged downspouts.  
- Continue roof replacement as scheduled.  
- Consider underground collection of downspouts at DHS as part of any larger project.  
- Consider improving the insulation value of exterior walls at DHS as part of any larger project.

Fire Protection
- Consider adding a complete fire suppression system at each school to improve life safety.

Plumbing
- Add and replace piping insulation as required and include labels and flow direction indicators.  
- Address ADA and water use issues at fixtures, including pipe insulation and faucet / valve replacement.  
- Reinstall vacuum breakers at a higher elevation and install backflow preventers where not present.  
- Replace cylinder traps and add acid neutralization at the science labs.  
- Replace exterior hose bibbs and corroded, damaged or improperly plumbed fixtures at DHS, including various sinks and lavatories.  
- Install an oil interceptor in the DHS Ag Shop.  
- Replace system valves as required and install thermometers at DHS.  
- Have all underground sanitary and storm drains televised (scoped) to verify condition.

HVAC
- Replace or add piping insulation as required.  
- Install isolation valves at key locations in DHS to aid in system maintenance.  
- Replace system pumps with variable flow pumps as part of any larger project.  
- Replace unit ventilators, extended UV intake ducts, locker room exhaust, and install proper exhaust in the Ag Shop at DHS.  
- Replace the gymnasium air handling system, and the one serving the Ag shop wing at DHS.  
- Install make-up air units for the kitchen and metal shop at DHS, interlocked with existing exhaust.  
- Install a dedicated split system air conditioner for the main data rooms.  
- Consider adding air conditioning to areas not already served, including where window units are currently installed.  
- Consider switching to a digital control system at DHS.  
- Systems should be rebalanced; consider an existing building commissioning.
Electrical
- Consider install multi-level and occupancy lighting controls.
- Consider LED light fixtures as part of any replacement or upgrade schedule.
- Reduce lighting levels in the corridors at DHS; commission a full building lighting-level analysis to help reduce energy costs.
- Replace original electrical panels at DHS; improve power and device distribution as part of any larger project.
- Perform regular testing of emergency generators and properly label panels.
- Update fire alarm system devices to current and ADA standards.

Technology
- Improve data cabling distribution and management.
- Create dedicated and cooled spaces for MDF (primary) and IDF (secondary) data racking.
- Replace clock systems with interconnected atomic clocks.
- Consider adding to the security camera systems to better monitor interior and exterior areas.
1. SITE

The following report is the result of site visits conducted by Todd Bushmaker of Hoffman PD&C that occurred on August 29 and September 26, 2014. Physical observations, construction plan review, and discussions with Lee Black, head of maintenance, and other staff were all used in the preparation of this report.

A. Existing Conditions

1. Location.

- The Darlington Community School District campus is located in the far southwestern portion of the City of Darlington, Wisconsin, in the center of Lafayette County.

- The address listed for the District Administration is 11630 Center Hill Road, which is one block east of the main highway through town, Wisconsin 23.

- The campus is shared by Darlington High School (DHS), Darlington Elementary-Middle School (DEMS), the administrative offices, and the stadium and other athletic fields. The school buildings are situated at a roughly 45-degree angle relative to North, while the football stadium is oriented almost exactly north-south.
2. Zoning.
   - The property is zoned “Residential” in the City of Darlington.
   - The portion of the city in which the District campus is located is a narrow “finger” with a very narrow connection to the main municipal boundary that runs through a cemetery; this was probably a result of a District-requested annexation from the Town of Darlington for the purpose of extending city services.

3. Property.
   - The entire campus is approximately 46 acres; the northern 25 acres includes DHS and the football stadium; the southern 21 acres includes DEMS.
   - The High School first floor level appears to be approximately four feet higher in elevation than the Elementary-Middle School floor.
   - The main entrance for each school is off Center Hill Road, which is an asphalt paved road with no shoulders, curb and gutter, or adjacent sidewalks.
   - To the immediate west and north of the property are residential areas with a semi-rural character. To the east are farm fields and a lumberyard. To the southwest is a church. The Highway 23 corridor is a commercial district.
   - There is a small municipal parcel bisecting the Darlington Schools property, which is primarily for a water system tower; this is a topographically local high point.
   - Chain link fencing surrounds the property along the north and east property lines.

4. Parking and Circulation
   - Asphalt paving entirely circles the high school building, in some areas directly abutting the building; there is no bus or drop-off lane separate from the parking lots. Drives and parking are located west and north of the elementary-middle school; there is a separated bus/drop-off lane that runs past the main entrance.
   - Parking around the high school consists of angled stalls, with some parallel parking along the edges. Primary student, visitor and event parking is the main lot to the northeast (and some southeast) of the high school, which provides 164 stalls, including nine designated as handicap. The main entrance to the school is directly connected to this lot.
A smaller event parking lot is located immediately west of the auditorium and is striped for thirty-eight stalls, five of which are designated handicap. The remainder of the parking to the southwest of the school and in the courtyard provides 74 stalls primarily for staff.

Parking west of the elementary-middle school is striped for 170 cars, including four handicap spaces. This lot is separated from the school by a drop-off lane that starts off Center Hill Drive just north of the adjacent church property. A drive and paved asphalt area circle around to the north of the building for deliveries, maintenance, and playground use; this latter dead-end drive is reportedly where the school buses queue.

A central driveway extending east from Avon Drive (between Highway 23 and Center Hill Road) bisects the property and acts as the connector between the two schools, and terminates at the playground on the north side of the DEMS building.

5. Drainage

The two main buildings appear to sit on the highest point of the site, with topography falling towards the northeast and the south. There is a slight “ridge” between the buildings creating a sharp divide between the two directions of drainage.

There are no artificial structures for collecting and holding stormwater; virtually all water apparently sheet drains in the directions above. The area immediately south of the DEMS building is significantly lower than the surrounding terrain; this area would be expected to be saturated following significant rain or snowmelt, depending on the soils present.

Only a couple storm water catch basins were noted; one behind (west of) DHS that is apparently connected to municipal storm, and one on the north side of DEMS that outfalls to the southwest of the building.
• The primary football field is constructed with a slight crown for drainage. The baseball diamond is located in a sharply depressed area between the buildings.

• Both buildings’ roof drainage consists primarily of perimeter gutters and downspouts, with some interior drains. DHS downspouts discharge to grade while DEMS discharge to grade and underground collection, the latter which eventually outfalls south between the building and west playground.

• Owner has not reported any problems with drainage or standing water.

6. Utilities

• Both buildings are served by municipal water and sanitary service. Electric and gas services are provided by Alliant Energy. CenturyLink provides phone and data service, while a rooftop-mounted dish provides satellite TV.

• Utility laterals come either directly off the Center Hill Road right of way, or down the east extension of Avon Street. Utilities for the new concession-restroom building come from the north. The water main is tied to the nearby water tower. All are underground and enter the buildings in the vicinity of the mechanical and electrical rooms.

7. Fire Protection

• Fire hydrants are located along Center Hill and County Shop Roads; one was noted inside the site near the DEMS rear asphalt area, and another at the fenceline by the baseball diamond. The aforementioned water tower is in very close proximity to the high school building.

• Paved fire department vehicle access is available around the entire perimeter of DHS, but only on two sides of DEMS, and topography would preclude extending pavement around more of the latter building.

• The Darlington Volunteer Fire Department is located about 1.5 miles away.

8. Environmental

• There are no anticipated environmental concerns or hazards located on the District property.

9. Soils

• According to the USDA, predominant soils in the campus area are of various silt loam varieties. These relatively loose, well-draining soils generally consist of sand, silt, some clay, and a small amount of organics, making them ideal for farmland use when on level or gradual slopes.

• Bedrock may be as close as five feet below the surface in this area.

10. Athletic and Play Fields

• The District’s primary football and track facility is located at the north end of the site and includes a six-lane asphalt running track, aluminum home and visitor bleachers on either side, a press box, facilities for field sports, and a recently constructed masonry concessions and restroom building. Field lighting is planned to be added this school year.

• Immediately east of the stadium is a practice and soccer field, including additional field sport facilities (such as shot put, discus and javelin). A metal storage and maintenance building is located on the south end of this field.
• Adjacent to the north DHS driveway is another practice field, striped but reportedly also used by the marching band.

• East of the DHS library wing is the District’s varsity baseball field. It is situated in a depression relative to the surrounding topography, and the east outfield fence abuts neighboring farm fields, less than 250 feet from home plate. This facility is reportedly significantly sub-par, to the point of having unnecessary safety hazards (such as the “dugouts” being too close to the baselines, and fly fences being inadequate). A support building is located immediately west of the diamond.

• Some high school sports also practice in the lower field south of DEMS, which includes a football goal and also has a small softball / tee ball diamond.

• There are three structured playground areas for elementary students: a large soft-surface one that includes an adjacent paved basketball area, between the primary DEMS entry drive and the church property; another enclosed soft-surface area outside the Kindergarten wing; and a small area just south of the 2-4 wing. Parts of DEMS’ rear (north) asphalt area are striped for hard surface play as well. The playground/basketball area closest to the road does not have any fencing or other barriers separating it from the street or the drive.

B. Observations

1. Asphalt pavement is in good to fair condition overall. Numerous cracks have been sealed, and the playground area behind DEMS has been recently sealcoated and restriped. No obvious outright failure is evident. Concrete walks are in good condition as well; some concrete curbs have evidence of damage or crumbling, likely due to snow plowing operations.

2. Center Hill Road, the primary access to the site, has a rural character and is not well suited to high traffic volumes or pedestrian and bicycle traffic, though the portion starting north of the high school was just recently repaved and striped. Highway 23, one block west, is better suited to higher traffic volumes, but access back towards the school site is through a residential area, or down the middle of a used car dealership via Avon Street.

3. Site circulation appears to be less than ideal. Buses pull in at the center access drive and queue at the dead-end. There is no dedicated drop-off drive at the high school, or separation of traffic. Visitor parking is not designated and separated from staff or student parking. Handicap spots at the high school are not striped to ADA requirements including designated access aisles.
4. There is no street-side building identification for the high school, and the location of the main entrance is not obvious to new visitors as it faces away from the main road. There is also no obvious identification of the District Administration offices. Any approach into the campus is less than straightforward, except for the main drive entry to DEMS, and is complicated by nearby residential driveways and the municipal water tower parcel.

5. Access to primary athletic facilities is one narrow asphalt-paved walkway from the main parking lot. Pedestrian and vehicular congestion would be anticipated after events. There are no permanent restrooms or amenities on the visitor side of the field, requiring a long walk around the far end of the track. Access to team locker rooms is a long and circuitous jog to and around the high school building.

6. Landscaping is primarily lawn areas, with some individual trees as well as hedgerows and tree lines set up for screening purposes. There is a significant natural tree line along most of the east property line where it abuts the farm fields.

7. A non-illuminated flagpole and benches are just outside the main entrance to DHS. A non-illuminated aluminum flagpole is adjacent to the entry walkway to the DEMS main entrance. There is a ground-mount sign at the main drive entrance to DEMS, but DHS has no such identification.

8. A small courtyard at DEMS, surrounded by the gym, commons and kitchen, has picnic tables and may be used for outdoor dining, though there is no controlled access or fencing around it.

9. At DEMS, a ground-mount transformer, a dust collection system, and dumpsters are located just northeast of the gym. There are three small wood sheds located on the edge of the asphalt in this area as well. Gas service is located just outside the kitchen’s receiving door.

10. At DHS, a transformer cabinet, gas service, generator and dumpsters are located just outside the boiler room. The main electrical service entrance is separated from the transformer cabinet by a large concrete wall. There is a wood storage building located just outside the auditorium’s southwest exit and it is reportedly used for stage props and other performance items.
C. Recommendations

1. Continue to maintain asphalt and concrete pavement and generate anticipated replacement schedule. Replace sections of damaged concrete curb. Restripe handicap parking stall areas to correctly meet accessibility requirements. If any significant work is anticipated, especially building additions, recommendation is to have a civil engineer redesign traffic patterns and parking areas to improve flow and separate user types.

2. Improve access to football stadium / track and add handicap seating to bleacher areas. Consider relocating baseball diamond to comply with standard dimensions and layout, as well as adding spectator seating and proper team facilities.

3. Improve building identification at DHS by erecting signage at Center Hill Road drives. Install signage at visitor parking stalls. Install directional signage to identify location of main entrance, and as part of any building renovations, consider improving the aesthetics and focus of main entrance relative to the rest of the building. Also install identification and directional signage for District Administration offices.

4. Replace sections of existing fenceline that have fallen into disrepair. Add fencing to separate playgrounds from high-traffic and/or public areas. Consider adding traffic control gates to restrict vehicles from certain areas at certain times of day to improve safety. Consider building enclosures for the dumpsters at each school, and add barriers or fencing around utilities to discourage student access.

5. Illuminate the flagpoles.

6. Consider extending water laterals to parts of the site for the purposes of adding fire hydrants to make fire department connections more accessible.

7. Commission a proper traffic study of surrounding roads and discuss with local authorities possible upgrades to Center Hill Road to include curb & gutter, turn lanes, sidewalks and bike lanes if feasible.

8. Consider evaluation and purchase of adjacent farmland to alleviate athletic field and site circulation concerns. As part of that, consider adding access from County Shop Road on the north and/or County Highway K on the south.
2. STRUCTURE

The following report is the result of site visits conducted by Todd Bushmaker of Hoffman PD&C that occurred on August 29 and September 26, 2014. Building observations, construction plan review, and discussions with Lee Black, head of maintenance, and other staff were all used in the preparation of this report.

2.1 Elementary-Middle School building (DEMS)

A. Existing Conditions

1. This building was constructed in 1996; architect of record is Lyons Associates of LaCrescent, MN. The building is located at 11630 Center Hill Road, Darlington WI, and serves approximately 570 elementary and middle school students. It also houses the District’s main administrative offices.

2. The building is a one-story structure with a mechanical mezzanine immediately adjacent to the gym and commons. It is approximately 105,000 square feet in area, including the mezzanine, and is not fire sprinklered.

3. Structure consists of load-bearing masonry (CMU) with a roof consisting of steel bar joists and deck. Mezzanine is precast concrete plank on loadbearing CMU. Foundation is concrete frost wall with spread footings.

B. Observations

1. The building appears to be in generally excellent condition. Very little in the way of structurally significant settlement or cracking was apparent from casual observations. Staff reports no problems or concerns regarding the structural integrity or performance of the building.

2. Masonry walls are a running bond pattern, which is more stable than the stack bond used in the high school, particularly for loadbearing applications.

3. Building expansion joints were installed at major junctions, allowing portions of the building to move independently, thus reducing cracks.

4. Minor settlement cracking was noted at the back of the large group lecture room. The crack follows mortar joints and appears to have been recently tuckpointed.

5. A single damaged CMU was noted in the Commons; the face shell was reportedly damaged by sports equipment.

C. Recommendations

1. Continue to monitor the wall on the backside of the large group lecture.

2. Repair the face shell of the damaged CMU in the Commons.

Rear wall of large group lecture, showing repaired CMU settlement.
2.2 High School (DHS)

A. Existing Conditions
   1. This original building was constructed in 1964 with additions in 1969 and 1976. The building is located at 11838 Center Hill Road, Darlington WI, and serves approximately 220 high school (9-12) students.
   2. The building is a one-story structure with mechanical mezzanines to either side of the gym stage. It is approximately 93,500 square feet in area and is not fire sprinklered.
   3. Primary structure consists of sloped steel beams bearing on exterior and corridor masonry (CMU) walls, with a Tectum roof deck; some areas use bar joists instead of beams. Gymnasium uses four large sloped steel frames to support the cross beams and Tectum deck. Ag shop addition is partially steel frame and partially masonry loadbearing. Foundation is assumed to be concrete frost wall with spread footings.

B. Observations
   1. The building appears to be in generally good condition. Very little in the way of structurally significant settlement or cracking was apparent from casual observations. Staff reports no problems or concerns regarding the structural integrity or performance of the building.
   2. Masonry walls are a stack bond pattern, which is less stable than the running bond used at DEMS, particularly for loadbearing applications. The assumption is that the CMU cores under the steel members are reinforced and grouted. Most walls in the building, loadbearing or not, are stack bond CMU; where abutting directly under steel structural members (as between classrooms), steel angles close the gap at the top of the wall to allow differential movement. The walls of the gymnasium have what appear to be structural glazed tile to 8'-0", and the kitchen walls are made of the same material. All CMU walls have a 5" starter course of the glazed tile as a finished base.
   3. Building expansion joints were installed at the junctions between additions, allowing those portions of the building to move independently.
   4. The non-structural CMU wall between the principal's office and the activity director's office shows some minor movement cracking at the mortar joints.
   5. The exterior wall of the Ag shop displayed some significant movement or settlement, resulting in large cracks in the mortar joints; during a subsequent visit it was noted that this area had been recently tuckpointed.
C. Recommendations

1. Continue to monitor any movement in the exterior wall of the Ag shop. If significant cracking or gaps in the mortar return, more intense stabilization may be required.

2. Tuckpoint or caulk the gaps in the office wall and continue to monitor for any movement.
3. ARCHITECTURE (Interiors)

The following report is the result of site visits conducted by Todd Bushmaker of Hoffman PD&C that occurred on August 29 and September 26, 2014. Building observations, construction plan review, and discussions with Lee Black, head of maintenance, and other staff were all used in the preparation of this report.

3.1 Elementary-Middle School building (DEMS)

A. Existing Conditions

1. This building was constructed in 1996; architect of record is Lyons Associates of LaCrescent, MN. The overall building design is sound, with a modern “wing” configuration, good flow and durable materials.

2. The building is located at 11630 Center Hill Road, Darlington WI, and serves approximately 570 elementary and middle school students. It also houses the District’s main administrative offices.

3. The building is a one-story structure with a mechanical mezzanine immediately adjacent to the gym and commons. It is approximately 105,000 square feet in area, including the mezzanine, and is not fire sprinklered.

4. Only portions of this building are air conditioned. The District and DEMS administrative offices, computer labs, science rooms, LMC and large group room are served by central air conditioning; however many small packaged “window units” have subsequently been installed in individual rooms. Most rooms with windows have operable units for ventilation.

B. Code Assessment

1. The Occupancy (as defined by the International Building Code, current adopted edition 2009) is Educational (E) with unseparated mixed occupancies of Assembly, Business and Storage. Several storage rooms are noted as being rated.

2. Construction Type (ditto) appears to be Type IIB based on the visible materials. Everything else being equal, a building of this type under new codes would be limited in area to 14,500 square feet, meaning several fire separations would be required (even fully sprinklered the limitation would be 58,000 square feet). Any additions will have to be separated with a fire wall.

3. Today’s Building Code is different than the building code from 1996. Any major remodeling/additions to this facility must meet the current code. An evaluation of the nature of the proposed changes/modifications will need to be completed to fully understand what effect the current code would have on the existing building.

C. Handicapped Accessibility

1. Entrances and exits are at grade and typically are sheltered from the elements; exterior doors are at least 36” wide and have accessible hardware, including automatic openers in some cases. In general, all interior rooms are on an accessible route, with appropriate clearances maintained in corridors and around door swings. Exceptions occur with overcluttered areas making access to accessories, switches, receptacles, and even door clearances difficult.

2. There is no elevator up to the wrestling mezzanine. This space is not handicapped accessible; generally any level greater than 3,000 square feet is required to be on an accessible route. The stairs meet current requirements.
3. Not all of the toilet rooms in this school meet the current requirements for handicapped accessibility.
   - The restrooms that do meet the requirements in force from 1996 are marked as such with appropriate signage; it is not expected that major changes would be required in these rooms. However any major remodeling would likely require the addition of new, or remodeling of existing, accessible toilet rooms.
   - Examples of non-compliant restrooms include those serving individual kindergarten rooms, the nurse toilet, kitchen toilet, coach’s toilets, teacher’s lounge toilets, and the larger bathrooms at the end of the 5-8 wing.
   - Primary issues with the accessible bathrooms include lack of insulated piping under lavatories, reach ranges of accessories, and non-compliant faucets on the group lavatories.
   - There are accessible showers available in the locker rooms.

4. Most of the cabinets and sinks in classrooms, labs and other areas appear to meet at least “parallel approach” reach ranges. Note that the lower grades have appropriately shorter cabinets and fixtures for children.

5. Gymnasium bleachers do not have any wheelchair+companion spaces, though given the low capacity the ends of the bleachers may serve this function.

6. The exterior doors of the gymnasium have a “double threshold”: one for the wood floor transition and one for the door itself, separated by about 6” of VCT flooring. While the thresholds themselves are probably compliant, having two in a row so close could cause some problems.

D. Observations

1. General Notes. The building appears to be in generally excellent condition.
   - Corridor floors are typically resilient tile with vinyl base in very good condition; corridor walls are generally painted CMU and in excellent condition. Vestibule floors and base are quarry tile. Ceilings are 2x4 grids with suspended acoustical tile; as typical with 2x4 tile they are showing signs of sagging due to lack of humidity control (air conditioning), and minor water spotting was noted in a few locations.
   - Corridor coat racks in the lower grade wings are stained plywood in very good condition and include a seamless resilient “boot step” underneath. Laminate coat racks within the Kindergarten rooms are reportedly disliked due to crowding and lack of supervision. Corridor lockers in the upper grades are painted metal with recessed padlock hasp and are in excellent condition. It was reported that there may not be a sufficient number of lockers, as the larger units were intended (impractically) to be two-person.
   - Most classrooms have resilient tile with vinyl base in very good condition; it was reported that areas of carpet in the Kindergarten rooms were removed recently in favor of tile for allergen/air quality reasons. Walls are typically painted CMU or vinyl-covered drywall in good condition. Ceilings are suspended acoustical tile, in generally good condition with the aforementioned sagging. Smartboards are present in all classrooms though chalkboards are typical instead of whiteboards. Many classrooms are outfitted with voice amplification systems.
   - Offices and conference rooms typically have carpet with vinyl base in good condition, painted CMU and drywall walls, and suspended tile ceilings.
Maintenance areas and locker rooms generally have sealed concrete floors, painted or unpainted CMU, and often open structure ceilings. Bathrooms have ceramic tile and base in excellent condition, painted CMU walls, and vinyl-covered suspended tile ceilings in good condition; bathroom partitions are painted metal in good condition.

- Cabinetry throughout the building is typically plastic laminate in good condition; science lab casework has black epoxy countertops in very good condition. A few rooms have wood finished casework in good condition, though some staff-only and back areas appear to be using second-hand “borrowed” and site-built casework installed subsequent to the school opening. Casework is noted to be appropriately sized depending on the grade level and most classrooms have a sink. Kindergarten sinks include a bubbler function, and Early Childhood includes a small kitchenette that was very cluttered at the time of visit.

- Building was noted during visit to have excessive positive pressure; exterior doors, especially without a vestibule, didn’t reliably close and latch.

- Interior signage follows most accessibility guidelines, but the double-sided foam tape used has been giving way and most are drooping.

- Classroom and other collaborative spaces were noted to have chalkboards. Smartboards were recently installed as well, though conventional TV’s and VCR’s were still mounted in many locations.

- Building includes at least three computer labs, plus a computer-intensive tech ed classroom. IT infrastructure is somewhat decentralized, with primary head-end behind the library and additional racks installed in other locations (not originally intended for them). Infrastructure has been updated to include wifi capabilities throughout school; original plans indicate cable trays were provided above all corridor ceilings, making expansion and upgrades easier.

- Some of the Kindergarten restrooms shared space with storage though this was unlikely the original intent.

2. Doors

- Interior doors are generally wood in hollow metal frames. Some of the highest use doors show some signs of wear but seem to be functional. Classroom doors appear to be in very good condition. Aluminum and hollow metal exterior and vestibule doors appear to be in generally very good condition, though the paint on the outside looks a little faded.

- Door hardware is in excellent shape and is mostly ADA-compliant, including lever handle sets. Closers and panic devices functioned well and weatherstripping was in good condition. Several doors were noted to have either kick-down or bumper-and-hook hold-opens; the latter in many cases were pulling out from the adjacent wall. Note that current accessibility codes require the bottom 10” of all doors to be clear of hardware, including bottom-rod panic devices and the hold opens described above.

- It was reported (and observed) that lock cylinders can be difficult to operate with a key, depending on the function. Some levers were sagging. Door latches down the K-1 corridor were noted to have inconsistent functions and were different styles, indicating replacements subsequent to building completion. Hoffman usually specifies mortise-type hardware for heavy-use buildings like schools; however the heavy-duty cylinder-type hardware installed (probably for budget reasons) should last many years. Keying is BEST Access Systems.
• Several doors to fire-rated rooms did not have fire door hardware (closers, automatic latching). Examples include the double doors to the Gym Storage and Cafeteria Storage rooms; additionally the latter was out of adjustment and rubbing on the frame.

3. Gymnasium

• Wood gym floor is in very good condition, including transitions, and consists of a main court and two non-standard cross courts; volleyball sleeves were not noted. Backstops and divider curtain are electrically operated. Controls and other devices have protective cages. Acoustics are controlled by wall panels, sound system and scoreboards present. Four-row retractable wood bleachers are installed on opposite walls, complete with end railings and are in good condition. It was reported that porcelain drinking fountains were removed from the gym subsequent to project completion.

• Locker Rooms: Sealed concrete floors with vinyl base; coach’s offices vinyl tile, bathrooms and showers ceramic tile. Vented athletic lockers in mix of 2- and 5-tier, with wood benches. Coach’s toilets not accessible; include shower (girls' was used for storage). Locker room toilets accessible but girl’s second toilet has low sloped ceiling under mezzanine stair. Showers lack modern provision for individual stalls, though boy’s has curtain track around handicap shower.

4. Commons:

• Vinyl tile floor is in very good condition and includes basic court striping for multi-function use. Acoustics controlled by wall and ceiling panels (Tectum). Two wall-mounted folding backstops. Sound system included. Protective cages around most devices but not exit signage. Access and windows to exterior eating court; unclear on supervision or security for this area. Large table storage room was completely filled.

• Kitchen: Quarry tile floor in very good condition. Walls are painted CMU, ceiling of 2x2 vinyl-covered tile is in very good condition. Stainless counters and equipment appear very well maintained; kitchen is well-equipped and there’s room to add items under the hood. Serving line seems a bit narrow; no sneeze guard at serving counter. Main hood lacks complete fire suppression system; light switch mounted to hood is not accessible. Dishwash area has rubber mats; booster heater is electric and located next to dishwasher. Grease interceptor is outside. Staff toilet not accessible. Large freezer and cooler units and dry storage room. Very little receiving staging area; noted crates outside receiving door. Receiving door exterior somewhat damaged and rusting.

5. Science Labs: Rooms are configured for introductory science courses, with perimeter casework that includes peninsula-style group workstations. Sinks and apparatus receivers are provided, but no gas cocks. Fixed teacher demonstration stations are provided and include a sink. No special safety equipment was noted (fire extinguishers, blankets, chemical storage, eye washes, etc), with the exception of an eyewash and fire extinguisher in the shared central prep room.

Large Group Room: Configured as small auditorium. Carpeted floor and vinyl base are in good condition; includes carpet-covered concrete seating risers. Walls are painted CMU with an area of acoustical wall covering; some recent tuckpointing was noted on the back wall. Ceiling is 2x4 acoustical tile with minor sagging noted; ceiling over front of room is drywall soffits. Sound and A/V
systems installed; room includes small conference room behind dais. Seating consists of portable folding chairs; no ramp access to upper seating tiers but wheelchairs could be placed in front row.

7. Library-LMC:

- Carpet looks a little worn and is wrinkly in some areas. Ceiling is high but has lower drywall soffit around perimeter; center area feature includes skylights that appear to be closed up. Lighting is split into several controllable banks. Casework is primarily wood; library has large amount of stack space, tall units along the walls with low stacks in the middle. Two areas of flexible chair-table space are situated for class or casual reading use; projector and screen provided in one of these areas. Checkout counter is good sized, is modular, and has a lower counter area for handicap or small children use. Computer station in middle of room is served by PVC cable drop from ceiling despite presence of floor boxes. No detection loops are installed at entry doors but plans indicate empty boxes for future installation.

- A computer lab is connected on the back side of the library, as are two small breakout rooms. The staff workroom and librarian office are large; bookdrop from corridor empties into periodical/storage room. An A/V equipment room is accessed through the staff workroom and was very cluttered at time of visit; one wall apparently serves as building’s central IT and A/V distribution node with no dedicated room or air conditioning unit (central area including library are served by a primary A/C unit).

8. Arts:

- FACE room is reportedly not currently utilized as program is underfunded and no certified staff is available. Room includes four complete kitchen stations, portable teaching station, pantry/laundry/storage room with chest freezers and washer and dryer, perimeter casework presumably for sewing and other crafts, and a central classroom area with desks. Floor is split between vinyl tile and carpet, both in good condition. Casework and appliances are in good condition and countertops are at an accessible height; microwaves are mounted in upper cabinets. Cooking ranges are out in the open with no hoods, though exhaust is provided at the ceiling. No refrigerators were noted, though they may have been repurposed elsewhere.

- Art room is nicely sized with a separate project storage room and a kiln room. Perimeter laminate casework is in good condition and includes three sinks and a variety of storage options. Art teacher reportedly would desire more sinks, more storage, and more tackable walls. Kiln room is not rated; electric kiln has ventilation hood.

- Music consists of two primary rooms: a general music room configured for elementary school students, and a larger band room for middle schoolers. Storage, office space, and practice rooms are available for both. The band room has a high open-structure ceiling with acoustic panels, angled wall surfaces, isolated practice rooms, plastic laminate instrument storage, and an exit directly to the outside. Practice rooms and the band room corridor doors include sound seal door hardware. Finishes and components are in good condition.

- Tech Ed includes both a technology-focused classroom and an adjacent woodshop. The classroom includes perimeter, possibly homebuilt counters for computer stations. The connecting door as well as the adjacent office open to the wood shop, which is well equipped though cramped. The shop
includes four student locker-base workbenches, several stationary power tools, a dust-collection system, and a power distribution duct serving them. An adjacent storage room houses small tools and project materials.

E. Hazardous Materials

1. Given the age of the building, it is not anticipated to contain any notable amounts of asbestos or lead. No significant evidence of water infiltration was noted and the primary building materials do not support mold growth.

F. Recommendations

Continue removing barriers to accessibility.

- Consider adding a limited-service elevator to serve the wrestling room in the mezzanine.
- Insulate existing under-lavatory plumbing and replace the faucets at the group lavatories with accessible fixtures, (or reactivate the integral sensor faucets).
- Make sure all accessible restrooms are well-marked with appropriate direction signage throughout the building. Consider renovating the 5-8 common restrooms to accessible standards.
- De-clutter areas that restrict access to switches, receptacles, electrical panels, clearances around doors, sinks and appliances, etc.
- At the exterior gym doors, consider replacing the door threshold with a wider one that will cover the gap all the way to the wood floor transition.

2. Continue to maintain doors and hardware.

- Adjust existing closers at exterior doors to provide more closing force against positive pressure (or verify HVAC system is correctly balanced).
- Lubricate, repair or replace door hardware with difficult or sticky lock cylinders.
- Consider adding closers and automatic latches to rated Gym and Commons storage room doors.

3. Consider adding a fire-suppression system to the kitchen hood, and sneeze guards at the serving line.

4. Add safety equipment at each science room.

5. Re-attach existing signage throughout the school.

6. Replace stained and excessively sagging ceiling tile throughout.

7. Consider adding a fire sprinkler system to the building.

8. Consider removing or separating the storage from the kids’ restroom in the Kindergarten room.

9. Consider replacing chalkboards with markerboards, and relocate smartboards or screens to better suit the room’s configuration. Recycle older equipment.

10. Consider adding lockers or replacing existing to bring the count up.

11. Address excessive positive pressure with the HVAC system.
3.2 High School (DHS)

A. Existing Conditions

1. This original building was constructed in 1964 with additions in 1969 and 1976. There are two academic wings, a vocational wing, and a central core with gymnasium and commons.

2. The building is located at 11838 Center Hill Road, Darlington WI, and serves approximately 220 high school (9-12) students.

3. The building is a one-story structure with mechanical mezzanines to either side of the gym stage. It is approximately 93,500 square feet in area and is not fire sprinklered.

4. Only portions of this building are air conditioned. The DHS administrative offices and parts of the auditorium wing are served by central air conditioning; many small packaged "window units" are being used in individual rooms, particularly the computer labs. Most rooms with windows have operable units for ventilation.

B. Code Assessment

1. The Occupancy (as defined by the International Building Code, current adopted edition 2009) is Educational (E) with unseparated mixed occupancies of Assembly, Business and Storage. A few rooms were observed to be rated at one time, however the continuity or integrity of any such ratings is suspect.

2. Construction Type (ditto) appears to be Type IIB based on the visible materials. Everything else being equal, a building of this type under new codes would be limited in area to 14,500 square feet, meaning several fire separations would be required (even fully sprinklered the limitation would be 58,000 square feet). Any additions will have to be separated with a fire wall.

3. Today’s Building Code is vastly different from the codes in force at the time of original construction. Any major remodeling/additions to this facility must meet the current code. An evaluation of the nature of the proposed changes/modifications will need to be completed to fully understand what effect the current code would have on the existing building.

C. Handicap Accessibility

1. Entrances and exits are at grade (within an inch or so) and typically are sheltered from the elements; exterior doors are at least 36” wide and have accessible hardware, including automatic openers in some cases. In general, most interior rooms are on an accessible route; corridors are wide and generally not encumbered by encroaching projections. Locker hardware is not accessible.

Many doors do not meet current standards for opening size, hardware usability, maneuvering and reach clearances, opening effort, or a combination of these. Additionally, to accommodate the new gymnasium floor installation, integral ramps were installed at gym doors and other transition areas and for the most part these do not meet accessibility requirements.

3. Most of the toilet rooms in this school do not meet the current requirements for handicapped accessibility, for a variety of reasons.

   • The larger group toilet rooms have been recently remodeled to include accessible stalls and lavatories, required clearances, and modern conveniences; however the entries to these rooms were not updated at the same time and so have narrow doors, tight vestibules, improper hardware,
and noncompliant access clearances. Having accessible fixtures is meaningless if wheelchairs cannot access the restrooms in the first place.

- Various other single-occupant or smaller multi-occupant toilet rooms have not been updated and are typical of pre-ADA toilet rooms; some are so small as to be awkward even for able-bodied users.
- Group showers are approachable but controls are not accessible. Individual showers, such as the official’s locker room by the Metals lab, are small and non-accessible.

4. Where cabinets are provided, they generally meet the “parallel-approach” reach ranges for 36”h countertops, at least where clutter allows. There are no dropped-height or roll-under cabinets; additionally some cabinets crafted by the District, particularly workstations in the computer labs, may not meet accessibility requirements for roll-under access. Student science tables are also not roll-under accessible.

5. Gymnasium bleachers do not appear have any wheelchair or companion spaces, though at the time of visit they were retracted. The raised stage platform at the gym is not accessible. In the auditorium, there are spaces that can be used for wheelchairs at the top and bottom of the sloped floor; the stage is accessible but not directly through the auditorium.

6. Most of the building signage is not accessible to the visually impaired.

D. Observations

1. General notes: given the building’s age it has been maintained well, and the existing limitations are not surprising.

- Floors are typically VCT (not original) in good condition, but a few small rooms still have what appears to be 9x9 VAT flooring. A poured epoxy flake flooring material has been installed at vestibule floors, the remodeled bathrooms, locker rooms, and in the kitchen. The wood gymnasium floor was installed new last summer and has a vented “criss-cross” foundation, but is reportedly built-up over a previous asbestos-based floor; therefore it is higher than the surrounding flooring. The gym stage is strip oak flooring in fair to poor condition. Miscellaneous other rooms, including the auditorium, have carpet in various states of condition; the auditorium particularly is in fair to poor condition. Shop and maintenance areas have sealed concrete floors.

- Ceilings in most classrooms and the gym are vaulted exposed structure with Tectum decking that appears to be in good condition. Corridors generally have a 12x12 perforated metal tile system (and the continuous strip lighting makes them significantly overlit). The main lobby ceiling is a sprayed acoustic material on an unknown substrate, while the main group bathrooms have a plaster- or drywall-based ceiling. Several areas including the commons, auditorium wing, library, science rooms and other miscellaneous rooms have a standard suspended acoustical tile system.

- Walls are generally painted stack-bond CMU in good condition with a starter course of glazed tile or block as a base. The lower eight feet in the gym is glazed tile, as are the kitchen walls. Parts of the main lobby, and the main bathrooms have glazed ceramic tile walls or wainscot. Walls above the lockers in the corridor appear to be plaster-based or drywall; many newer
subdividing walls are also stud-and-drywall construction. Corridor lockers are in very good condition.

- Most cabinetry is either original or reportedly at least 20 years old, most are wood with plastic laminate tops. Science casework is wood with black epoxy tops. Main office casework may be “homebuilt” with finished wood countertops. Classrooms are generally outfitted with green chalkboards, though Smartboards have recently been installed, sometimes right on top of the chalkboards.

- Interior signage identifies each room; bathrooms have pictograms as appropriate, though signage identifying accessible bathrooms is misleading given the issues outlined above.

- It was noted that all exterior vestibules have been opened up by removing the interior set of doors and finishing out the opening. Staff could not indicate a reason for this. There are no code issues with this, though vestibules help with energy savings in the winter. The modifications were apparently completed recently, as evidence of existing hardware remains (e.g. pushbuttons for now non-existent auto operators).

2. Doors

- Interior doors are generally wood in hollow metal frames; most of the wood doors are showing significant wear. Many doors have louvers installed, and where vision lites are provided, many were papered over by the teachers. Gymnasium doors were reported to be rated, though no label is evident; there was concern that when they were cut down to accommodate the new gym floor, there was a potential hazard with asbestos-based fire insulation. Several doors that appear to be rated are hollow-metal, and many frames throughout the facility have had their doors removed entirely.

- Exterior doors are primarily fiberglass panel in aluminum frames with bronze rim panic device hardware. Closers and panic devices appear to function well for the most part and weatherstripping was in good condition. In some cases thresholds were too high above pavement, mostly due to settlement. A new hollow-metal insulated unequal leaf exterior door and frame has just been installed at the wood shop.

- Most hardware is dated and worn, though lock cylinders have recently been replaced or rekeyed; keying is BEST Access Systems. Hardware finish varies, depending on age and replacement. Most doors have either knob-style latching hardware, or particularly in the case of classrooms and restrooms, a deadbolt with push-pull hardware. Several doors were noted to have either kick-down or bumper-and-hook hold-opens; the latter in many cases were pulling out from the adjacent wall. Gym doors have surface-rod panic devices but the lower rods were removed when the new floor was installed.

3. Gymnasium

- New wood gym floor is in excellent condition, including transitions, and consists of a main court and two standard cross courts that include volleyball sleeves. Parts of the floor perimeter are not complete, as return air grilles close to the floor on either end of the gym must be modified. Permanently mounted and portable dehumidifier units are running 24/7 in an effort to reduce buckling of the floor. Glass backstops and the wood bleachers (in fair condition) are electrically operated. Some devices have protective cages.
Acoustics are controlled by Tectum roof deck, sound system and scoreboards present. Four skylights provide natural light.

- Stage is raised about 3’-4” above surrounding floors and was reportedly rebuilt due to structural concerns. Wrestling mats are stored here. There are remnants of theatrical lighting and various layers of curtains, however this area is reportedly only used for graduation ceremonies and pep band performances. Steps on either side are also wood construction.

- Locker Rooms: Epoxy flake floors and base; coach’s office apparently still has VAT. Metal lockers in good condition; PE lockers are mechanically vented, while athletic lockers are wire mesh style. There were no (fixed) benches present. Coach’s offices have private bathrooms with showers.

- Weight Rooms: Located at the far end of the vocational wing, originally the Art room, constructed as part of 1969 additions. Shares space with wrestling (nominally), only enough room for one function at a time. Two rooms connected with a sliding barn-style door, includes a small office. VCT floor in fair to poor condition, open structure on one half and ACT on the other. Large windows. Virtually inoperative exterior door on south end.

4. Commons – Kitchen

- Cafeteria is a long rectangular room with VCT floor and ACT ceiling. Despite the exterior windows, it has a claustrophobic feel. A concessions area, presumably run by school groups, is at one end of the room and the serving line and kitchen are at the other end. Concessions area includes a sink, refrigerator and electric cooktop; cabinets are wood with plastic laminate tops in fair to poor condition. Two counter shutters open up into the cafeteria.

- Kitchen was remodeled within the last five years and includes a serving line, cooking, prep and dishwashing areas, a built-in cooler, and storage and staff facilities. At the time of the remodel, a standalone cooler box was installed just outside the receiving doors at the back of the kitchen. The grease trap is located outside just behind the new cooler box. Floors are epoxy; ceiling is 12x12 tile. Stainless surfaces and cabinets are in good condition; exhaust hood over cooking equipment does not have a fire suppression system.

Note: there is reportedly little crossover between the DHS and DEMS kitchens (neither is designated as a “central” kitchen, though DEMS’ is larger and better equipped).

5. Science Labs

- Three rooms: 10-12 Biology has perimeter casework and fixed student tables; Grade 9 Earth Sciences has some casework and regular desk seating; Chemistry-Physics has perimeter casework with six peninsula workstations. Each room also has a fixed teaching station with utilities; all countertops black epoxy with integral sinks where provided.

- Basic prep and storage rooms are between Biology and Earth Science, including a vee-shaped bay window that may have been intended as a “greenhouse” area. Biology includes one wall of lit display cabinets for animal specimens and related materials. Earth Science doubles as a Math classroom. Chem-Physics has a dedicated prep room and vented chemical storage room, along with a single fume hood.

- No safety equipment was noted, including fire extinguishers, eyewash or shower stations, fire blankets, etc.
6. Library is a basic rectangular room with higher ceiling, bay window on one end and "clerestory" windows along long wall. Only computer workstation area is fixed casework; circulation desk and bookshelves are not fixed. Library offices have been repurposed to basic storage and A/V checkout equipment, along with one IT rack. Carpeted floor (except for 8" at perimeter is painted concrete) in fair condition; area at main doors is VCT along with offices. ACT ceiling throughout. Main doors stick and don’t latch properly.

Art is not located in its original room. Current room is small and narrow with no window. No ventilation except for hood over kiln, which is not in its own room. Some perimeter cabinets with island workstations, all in fair to poor condition. VCT floor, high open structure ceiling. Shares adjacent computer room with Tech Ed; another door opens directly to Wood shop.

7. Music (band and choral) has a large room with high ACT ceiling, indirect lighting, and large windows. Perimeter casework, including basic instrument storage. VCT floor with portable risers. No acoustic control except ceiling. One end has two practice rooms, an office and an ensemble room, all of which currently serve multiple roles. Some practice reportedly occurs in the corridor.

9. Vo-Tech

- **Ag Program**: Addition from 1976, metal building and conventional CMU loadbearing construction; consists of classroom, shop, office, storage, and two bathrooms. Accessible only by going through Metals shop (no connecting corridor). Open structure, ceiling only at classroom-bathroom end; concrete floors. Plans indicate many existing building windows were blocked up to accommodate addition. During first visit, significant CMU settlement was noted at west exterior wall; subsequent visit noted repairs and tuckpointing. Shop and storage appear to be shared with maintenance, including receiving, yard equipment and as a vehicle garage.

- **Metals**: Includes welding stations and foundry area with attendant ventilation, as well as metalworking tools. Ceiling appears to be plaster construction (no exposed structure), floor is concrete in good to fair condition. Overhead door and exterior windows included; adjacent office and storage between shop and tech ed classroom, with borrowed lites allowing monitoring. Access to Ag addition is through Metal shop, disallowing security; sports officials’ locker room and bathroom also open into Metal shop rather than corridor. Connecting door to “art” addition (weight room) is immediately adjacent to foundry area.

- **Woods**: Standard island workbenches with lockers below; stationary power tools served by central dust collection. Perimeter hand tool storage; no dedicated tool room. “Home-built” office area in corner; gluing and finishing rooms on opposite end with "home-built" wood storage mezzanine. Finishing room includes blast-proof light fixtures and hazardous materials cabinet. New internal dust-collection system; external unit apparently abandoned in place. New unequal-leaf exterior hollow-metal insulated double door was just installed in location of old door; opening in masonry wall was enlarged to accommodate. Concrete floors and open structure ceiling.
E. Hazardous Materials

1. Some asbestos remediation has reportedly taken place as maintenance upgrades have occurred, primarily concerning HVAC and water piping; however no formal survey or schedule of abated materials is available. Casual observation in the boiler room indicates that some piping and fitting insulation is still suspected to include asbestos, including boiler flue jackets. There are some rooms in the school with suspected vinyl asbestos tile (VAT), leading to assume that most floors were originally VAT; whether they were abated prior to installation of new flooring, or just covered up (encapsulated) is unknown. The original gym floor was reported to contain asbestos and was encapsulated by the new wood floor installation. There was concern by staff that original fire-rated doors may contain asbestos insulation; many suspect gym doors were recently modified (cut shorter) to accommodate the new wood floor. Any original caulking and glazing that remains may also be suspected to contain asbestos. Most ceilings are either metal tile or modern acoustic tile, however some 12x12 spline-type acoustic tile and sprayed acoustic material may be suspected to contain asbestos materials. The manufacturer reports that asbestos was never used in any “Tectum” products, including this building’s roof deck.

2. Given the age of the building, use of lead paint may be suspected; however it has likely been covered up with modern formulations as maintenance repainting has occurred through the years.

F. Recommendations

1. As much as practical, remove barriers to accessibility:
   - Remodel entry areas of otherwise accessible restrooms, as well as locker rooms, to allow full access. Consider adding or remodeling to create accessible “unisex” single-user toilet rooms where appropriate.
   - Replace door hardware as required to meet accessibility requirements. Adjust or replace door closers to opening force requirements. Consider adding automatic operators at key locations or where assistance would be required, such as at gymnasium doors.
   - Consider adding a lift to access the gym stage.
   - Replace or modify sections of the bleachers for wheelchair and attendant seating.
   - Re-work, as much as practical, transitions to wood gym floor to better accommodate accessibility requirements.
   - Repair pavement and thresholds as required to maintain flush entry and exit points.
   - Provide accessible workstations where casework is provided, including computer labs and science rooms. Modify service casework to accommodate accessible users, including main office desk.
   - Replace some lockers with fully accessible units, including in the locker rooms.
   - Replace interior signage with compliant tactile signage.
   - Assure that all life safety systems can alert all building occupants.
2. Verify that all required fire separations are intact and continuous and with penetrations properly firestopped; and that fire doors are in place, labeled, and operating properly.

3. Have a complete hazardous material survey conducted, including testing of materials, and if necessary have all such materials abated or encapsulated.

4. Consider adding a fire-suppression system to the kitchen hood.

5. Consider adding a fire sprinkler system to the building.

6. Create a secure circulation path to the Ag shop addition.

7. Consider creating a separate room for the Art kiln, or move it to an available dedicated space.

8. Consider replacing chalkboards with whiteboards; verify that position of Smartboards is consistent with the room configuration. Consider relocating the projector in the Board Room. Recycle old equipment.

9. Consider reinstalling interior door sets to re-create energy-saving vestibules (verify clearance between door sets meets accessibility requirements).

10. Provide safety equipment in the science labs, including a self-contained eyewash station (that requires no plumbing), fire extinguisher, and fire blanket.
4. ENVELOPE (Exteriors)

The following report is the result of site visits conducted by Todd Bushmaker of Hoffman PD&C that occurred on August 29 and September 26, 2014. Building observations, construction plan review, and discussions with Lee Black, head of maintenance, and other staff were all used in the preparation of this report.

4.1 Elementary-Middle School building (DEMS)

A. Existing Conditions

1. This building was constructed in 1996; architect of record is Lyons Associates of LaCrescent, MN. The building is located at 11630 Center Hill Road, Darlington WI, and serves approximately 570 elementary and middle school students. It also houses the District’s main administrative offices.

2. The building is primarily a one-story structure and consists of load-bearing masonry (CMU) with a roof consisting of steel bar joists and deck. Mezzanine is precast concrete plank on loadbearing CMU. Foundation is concrete frost wall with spread footings.

3. Exterior Walls

- Exterior walls consist of a combination multi-wythe brick veneer with CMU structure, and single-wythe split-face CMU. The only insulation provided is either a core-fill foam product, or the inside face is furred out with studs and insulation; these are not cavity walls.

- Brick veneer is utility size (4x12) in a running bond pattern. The splitface makes up a 2'-8"h "water table" and other decorative elements; there is a flashing transition between the brick and the split-face consisting of a thru-wall membrane and a stainless steel kick-out. Window sills are cast stone while window and door heads have an apparent brick sailor course above the painted steel lintels. Proper control joints and weep systems have been installed.

- Most exterior doors (and the interior vestibule doors) are insulated hollow metal in hollow metal frames, with the exception of the main entrance and the entrance by the District Administration, which are all aluminum. Windows are aluminum with insulated glazing and a venting sash. Exterior soffits are plaster. The only overhead door is installed to access the generator room at the northeast corner of the building.

- Access control and a security camera system are installed at the entrances and other selected locations.

4. Roof

- Visit did not include direct observation of the roof.

- Roofing system consists of a single-ply membrane over insulation. Primary roof areas are sloped structure to perimeter gutters; gymnasium and commons roof is tapered on flat structure with perimeter parapets, interior drains, and scuppers. Original plans indicate a ballasted system, however actual conditions indicate an adhered system; it is unknown if roof has been replaced since the original construction (normal expected membrane roof lifetime is 15 – 20 years). Owner has not reported any problems with roofing integrity or condition.
- Roof edges, fascias, flashings and parapet caps are prefinished metal. Gutters and downspouts are of the same materials; downspouts are open-face with receivers for underground collection.

B. Observations

1. The building exterior appears to be in generally excellent condition. Very little in the way of structurally significant settlement or cracking was apparent from casual observations. Staff reports no problems or concerns regarding the integrity or performance of the exterior walls.

2. Some minor cosmetic staining was noted on the splitface in some areas, as well as small spots of efflorescence on the dark red brick. Minor settlement cracks were observed in some brick at the north corner of the gym.

3. Doors were in excellent to very good condition, with the exception being the receiving door by the kitchen which is exhibiting some minor wear and corrosion. Windows appeared to be in very good condition, though operable units were not tested. Painted steel lintels were in good condition. Some perimeter sealant around various openings was showing signs of early failure.

4. Fascias and gutters are in very good condition. Some downspouts in paved areas have superficial damage likely due to students or snowplowing operations.

C. Recommendations

1. During dry sunny weather, clean the staining off the splitface masonry with detergent and stiff brush, allow to dry thoroughly, then apply a masonry sealer to help with stain resistance and water infiltration. Do not power wash. Minor efflorescence on the brick is best left to itself, as remediation actions may make the problem worse.

2. Replace caulking at perimeter of openings and at control joints as required.

3. Prep and repaint kitchen receiving door. Repaint other doors as required.

4. Repair or replace damaged downspouts.
4.2 High School (DHS)

A. Existing Conditions

1. This original building was constructed in 1964 with additions in 1969 and 1976. The building is located at 11838 Center Hill Road, Darlington WI, and serves approximately 220 high school (9-12) students.

2. The building is a one-story structure approximately 93,500 square feet in area and is not fire sprinklered. Primary structure consists of sloped steel beams bearing on exterior and corridor masonry (CMU) walls, with a Tectum roof deck. Foundation is assumed to be concrete frost wall with spread footings.

3. Exterior Walls
   - Exterior walls consist of a multi-wythe brick veneer with CMU structure; no insulation is evident and design practices at the time this building was constructed did not include cavity or core-fill insulation. According to the documents however, the 1969 and 1976 additions (auditorium wing, current weight room, and Ag shop) do have cavity walls with minimal rigid insulation, core fill, or both.
   - Primary brick veneer is modular size in a running bond rowlock pattern; there is a contrasting special-size stack bond veneer immediately under most of the windows. Window sills are metal flashing (not original) to match the windows, and window and door heads have exposed painted steel lintels. Proper control joints and weep systems are not present, which is again typical for a building this age.
   - Most exterior doors are insulated fiberglass panel in aluminum frames (not original), with the exception of the weight room exit which is hollow metal. Windows are replacement aluminum with insulated glazing and most have a venting sash or sashes. Exterior soffits are painted wood. Overhead doors are present at the Ag shop and main electrical service.
   - Painted metal louvers serving the unit ventilators and other HVAC equipment are present in many locations, usually under windows. Residential style window-mount air conditioning units were noted as installed in several locations.
   - Access control and a security camera system are installed at the entrances and other selected locations. Surface-mounted conduit was noted in a few locations, particularly the south end where communications run to the DEMS building.

4. Roof
   - Visit did not include direct observation of the roof.
   - Roofing system apparently consists of a single-ply white membrane (not original) over insulation. Primary roof areas are sloped structure to perimeter gutters; auditorium roof is a low-slope structure with perimeter parapets and scuppers. 1976 Ag addition is sloped structure with metal roofing (original). The age of the current membrane roofing is unknown, though owner reports that replacement is anticipated and has been scheduled. Owner did not report any roof leaks or other water infiltration.
   - Roof edges, fascias, flashings and parapet caps are prefinished metal and painted wood. Gutters and downspouts are of the same materials;
downspouts are both standard rectangular profile and open-face, all discharging at grade.

B. Observations

1. The building exterior appears to be in generally good condition. Very little in the way of structurally significant settlement or cracking was apparent from casual observations, other than at the Ag addition which has since been stabilized. No significant spalling or other weather damage was noted. Staff reports no problems or concerns regarding the integrity or performance of the exterior walls. A lack of control joints or weeps has apparently not materially affected the condition of the veneer.

2. Wood soffits are in very good condition and look to have been recently repainted. Documents for 1969 additions indicate wood species may be redwood, a naturally decay-resistant wood, partially explaining the good condition.

3. Doors are in excellent to very good condition, with the exception being the south exit door out of the current weight room, which did not operate at time of visit. Fiberglass doors and aluminum frames are extremely durable for exterior applications. Windows appeared to be in very good condition, though operable units were not tested; these windows were reportedly installed in recent years as replacement units. Painted steel lintels were in good condition.

4. Roof edge, gutters and downspouts are in very good condition; downspouts particularly are perhaps surprisingly damage-free even at paved areas. Areas of wood fascia are in need of repainting.

C. Recommendations

1. Continue to monitor any movement in the exterior wall of the Ag shop. If significant cracking or gaps in the mortar return, more intense stabilization may be required.

2. Downspouts discharge to grade; this has the potential to create pavement ice hazards in cold weather. If significant construction or pavement work occurs around the perimeter of the building, consider an underground collection system at the pavement areas like DEMS.

3. Adjust and repair the exterior weight room door, or replace to match the other doors.

4. As part of any renovations, consider furring out interior surfaces of exterior walls to provide additional insulation value.

5. Replace the roofing, flashings and other components as scheduled, and verify the condition of the skylights and their curbs. Continue monitoring the condition of the metal roof on the Ag shop, though it should last for many more years.
5. FIRE PROTECTION

The following report is the result of a site visit by Travis Bauer of Romes Design that occurred on August 29th, 2014. Site observations, construction plan review, and interviews with staff were all used in the preparation of this report.

5.1 Darlington High School (DHS)

A. Existing Data

1. Water is supplied to the facility by a 4” municipal connection located in the southwest boiler room. The cold water main passes through a 4” meter with dual gate control valves and a 2” bypass.

2. There is not an automatic fire protection system present in the facility. A hydraulic calculation would have to be done to determine whether the current 4” main could support such a system should it ever be required.

B. Recommendations

1. Consider adding a full fire protection system to NFPA 13 requirements, including fire department connections and a tie-in to the fire alarm system. A system will be easier to install during a remodel project.

2. If the water service main is not large enough to accommodate a system, a new water service lateral will need to be run to the building.

5.2 Darlington Elementary / Middle School (DEMS)

A. Existing Data

1. Water is supplied to the facility by a 6” municipal connection located in a storage room. Cold water main is reduced down to 4” building service with 4” water meter and associated butterfly valves with meter bypass.

2. There is not an automatic fire protection system present in the facility, but a 6” main is adequate should fire protection ever be needed in the building.

B. Recommendations

1. Consider adding a full fire protection system to NFPA 13 requirements, including fire department connections and a tie-in to the fire alarm system. A system can be retrofit above existing dropped ceilings.
6. PLUMBING SYSTEM

The following report is the result of a site visit by Travis Bauer of Romes Design that occurred on August 29th, 2014. Site observations, construction plan review, and interviews with staff were all used in the preparation of this report.

6.1 Darlington High School (DHS)

6.1.1 Water Supply System

A. Existing Data

1. Water is supplied to the facility by a 4” municipal connection located in the southwest boiler room. The cold water main passes through a 4” meter with dual gate control valves and a 2” bypass.

2. There is not an automatic fire protection system present in the facility. A hydraulic calculation would have to be done to determine whether the current 4” main could support such a system should it ever be required.

3. The hot water supply system is softened by one Hellenbrand water softener located in the southwest boiler room. The softener appears to be in fair condition.

   - Majority of the building is supplied by copper piping

4. Insulation for all supply side piping located in the boiler room is a combination of fiberglass and ArmaFlex. Other than the public restroom areas, the existing piping system throughout the building should be inspected for asbestos as majority of it is original and 50 years old.

5. Gate valves are present at the water service entry and in fair condition. Majority of the remaining facility side control valves are ball or gate type and remaining original valves are in poor condition.

B. Observations

1. Copper water piping in the facility is in fair condition. Most of the piping is original outside of the public restroom areas. Some piping in the boiler room is in poor condition and not supported from structure properly.

2. Insulation at most piping is of adequate thickness and in fair condition. Piping is not properly labeled and no direction of flow indicators are present on piping.

3. Original valves in the existing facility are in poor condition

4. Piping is adequately supported where observed either by hangers or floor supports.

5. The Owner did not note water quality and hardness to be an issue.

6. There is no control valve in the building for the natural gas service.

C. Recommendations

1. Insulation should be labeled by system with flow indicators

2. Original piping systems need to be inspected for the presence of asbestos in existing insulation.
3. Pipe hangers should be evaluated and replaced as needed in boiler room from appropriate method from structure. Hangers in entire facility should be inspected.

4. Original valves should be replaced when areas are affected by future remodeling or as needed due to malfunction.

5. A control valve should be installed on the natural gas main in the boiler room.

6.1.2 Sanitary Sewer System

A. Existing Data

1. The building is connected to the municipal system and apparently is all original construction.

2. Exterior sanitary piping is vitreous clay tile piping. Interior buried sanitary piping is cast iron hub and spigot.

3. The kitchen has 2 interior grease interceptors servicing sanitary discharge from required fixtures.

4. The kitchen equipment has PVC and cast iron waste with cast iron trays.

5. Science lab sink have drum traps and discharge directly to the sanitary system.

B. Observations

1. Some waste and vent piping has been replaced with PVC where leaks have occurred.

2. Hangers need to be verified for adequate sizing and space for supporting of piping.

3. Air fresheners have been installed in all public toilet rooms to address sanitary smell.

C. Recommendations

1. Depending on the level of chemical use in the science labs, an acid neutralization basin may be required should remodeling ever occur in these rooms.

2. Have underground piping televised to determine the existing condition of the piping.

3. Vent piping system should be inspected for deficiencies in system and open air terminals for blockage.

4. Replace drum traps on science lab sinks.
6.1.3 Storm Sewer System

A. Existing Data

1. Roofs on the facility drain to grade by gutter and downspout system. Gym storm water is dispersed by a combination of box scuppers and exterior downspouts.

2. There is no interior storm system.

B. Observations

1. Downspouts are in fair condition.

2. The Owner did not report any problems with the storm drainage system.

C. Recommendations

1. Monitor scupper drains and leaders and remove debris as needed. Replace downspouts as needed.

6.1.4 Plumbing Equipment

A. Existing Data

1. Water heating equipment consists of two (2) gas fired water heaters with coils in water storage tanks which services majority of the facility fixtures. Both units are fired with natural gas and are rated at 399999 BTU’s input. Water heaters output water temperatures could not be defined due to faulty thermometers. These two heaters supply majority of the plumbing fixtures in the facility. The heaters appear to be approximately 20 years old.

2. Circulating pump is inline Bell and Gossett and located between the two heaters. The pump is in new and in excellent condition.

3. An additional gas fired water heater with coils in water storage tank services higher temp requirements in the kitchen area. Heater is fired with natural gas and is rated at 365000 BTU’s input. Thermometers are in poor condition. This heater is in good condition approximately 8 years old.

4. Circulating pump for this system is inline Grundfos model and is in fair condition.

B. Observations

1. Water softening equipment is in fair condition and could be replaced under any new remodeling projects.

2. Water heaters serving the main fixtures of the building are in poor condition and should be replaced.

3. Recirculation pump serving the main system is in excellent condition and should be reused should heaters be replaced.

4. Water heater servicing the kitchen is in good condition.

5. Recirculation pump serving the kitchen system could be replaced under any new projects, but is in fair working condition currently.

6. Thermometers, valve and component should be replaced at both heater locations.
C. Recommendations

1. The equipment condition varies. Please see items listed under observation section above for recommendations.

6.1.5 Plumbing Fixtures

A. Existing Data

1. General
   - Water closets are a combination of vitreous china tank type and flush valve. The public restroom and locker room fixtures have been updated recently and are all in very good condition. Fixtures not located in public spaces appear to be original.
   - Urinals are vitreous china with flush valves.
   - Lavatories in individual toilets are vitreous china and are either wall hung with hot and cold faucet lever handles, wall hung with hot and cold metering faucets or a pedestal residential type fixture.
   - Drinking fountains are stainless steel, semi-recessed, electric water coolers located in several hallways.
   - Hose bibs are original.
   - No Emergency eyewash station was located in the science lab area.

B. Observations

1. Public and locker room plumbing fixtures are generally in very good operating condition.
2. ADA standards for fixtures or clearances in all private restrooms should be verified.
3. Water coolers are in very good condition and are in good working order.
4. Exterior hose bibbs are all original and in poor condition.
5. Boiler Room
   - Hopper should be replaced.
6. Kitchen
   - Hand Wash sink needs to be replaced.
   - All exposed vent connections need to be verified for meeting minimum code requirement of 38” connection height.
   - Numerous vacuum breakers serving sprayers were installed very close to flood rim level of fixtures. Elevating them to a height of 7”-6” off the floor would be better practice. In the current configuration it is possible for a sprayer to be left in a dirty bowl on the counter for example.
   - Appears hot water for dishwasher is connected into HVAC heating supply piping.
7. Cafeteria
   - Button on water cooler sticks and fixture should be replaced.
8. Science Labs 8, 9, 10
   • All sinks basins are corroded and should be replaced.
   • Old traps should be replaced.
   • Service sink in storage room with wooden legs should be replaced.

9. Faculty Room
   • Sink is very old and should be replaced.
   • Adjacent toilet room fixtures should be replaced and exposed piping to adjacent sink needs to be re-piped to meet code requirements.

10. Adjacent Small Toilet room in Corridor
    • Does not meet ADA requirements and fixtures should be replaced.

11. Home Ec Room
    • No ADA sink is available.
    • Sink plaster traps should be removed and replaced.

12. Tech ED
    • Hopper needs to be replaced
    • Verify need for interior interceptor. Above floor interceptor needs to be re-piped per code.

13. Agriculture
    • Wash Fountain faucet is not ADA compliant.
    • Service faucet is missing handle.
    • No grate on Floor Drain

14. Agriculture Toilet Rooms
    • Lavatory fixtures are in fair condition and could be replaced.

15. Shop / Service Garage
    • Hopper does not have vacuum breaker.
    • Wash basin faucet is not ADA compliant.
    • No vacuum breaker on hose bibb.
    • If vehicles are stored and / or serviced in the garage, an oil interceptor is required to intercept floor waste before discharging to the sanitary system.
C. Recommendations

1. Overall public and locker room plumbing fixtures are in very good condition, but original fixtures located in private areas and majority in classrooms need to be replaced.

2. Items for individual rooms listed under observations should be addressed. Similar rooms not listed should be verified for repeat issues.

3. Exterior hose bibbs are all original and should be replaced.

4. Service faucets with threaded connections need to have threaded connection vacuum breakers at faucet end.

6.2 Darlington Elementary / Middle School (DEMS)

6.2.1 Water Supply System

A. Existing Data

1. Water is supplied to the facility by a 6” municipal connection located in a storage room. Cold water main is reduced down to 4” building service with 4” water meter and associated butterfly valves with meter bypass.

2. There is not an automatic fire protection system present in the facility, but a 6” main is adequate should fire protection ever be needed in the building.

3. The hot water supply system is softened by one Hellendbrand water softener located in second floor mechanical space. The softener appears to be in good condition.
   - The building is supplied by copper piping

4. Insulation for all supply side piping is a combination of fiberglass and ArmaFlex.

5. Butterfly valves are present at the water service entry. Majority of the remaining facility side control valves are single lever ball type.

B. Observations

1. Copper water piping in the facility is all in very good condition.

2. Insulation at most piping is of adequate thickness and in good condition. Piping is adequately and correctly labeled throughout the facility.

3. The copper piping located between the softener and all piping in the mechanical space around the water heaters is not insulated.

4. The piping between the softener and water heaters is not properly sealed through wall openings.

5. Vacuum breakers are present at all fixtures as required by codes.

6. Valves in the facility are in good condition.

7. Piping is adequately supported where observed either by hangers or floor supports.
8. The Owner did not note water quality and hardness to be an issue.
9. The Owner has indicated that there are no current concerns or issues with the water supply system.

C. Recommendations
1. Piping insulation should be added to cold, hot and hot return piping in the second floor mechanical space.
2. Penetrations through wall in mechanical space should be sealed.

6.2.2 Sanitary Sewer System

A. Existing Data
1. The building is connected to the municipal system and apparently is all original construction.
2. The piping in the facility is schedule 40 PVC.
3. The kitchen has exterior grease interceptor located in the north courtyard adjacent to the kitchen.
4. The kitchen equipment has PVC waste with cast iron trays.
5. Science lab sinks have CPVC acid resistant piping and discharges directly to the sanitary system.

B. Observations
1. Some waste and vent piping has been replaced with PVC where leaks have occurred.
2. Hangers are in good condition and adequately sized and spaced for support of the piping.
3. The Owner did not report any deficiencies or problems with the sanitary piping system.

C. Recommendations
1. Depending on the level of chemical use in the science labs, an acid neutralization basin may be required should remodeling ever occur in these rooms.
2. Have underground piping televised to determine the existing condition of the piping.

6.2.3 Storm Sewer System

A. Existing Data
1. Roofs on the facility drain to grade or interior roof drains with vertical leaders connected to the underground storm system.
2. Storm piping is PVC throughout the facility.
3. The storm sewer system drains by gravity to an outfall on the south side of the property.
B. Observations
1. Hangers are in good condition and adequately sized and spaced for support of the piping.
2. The Owner did not report any problems with the storm drainage system.

C. Recommendations
1. Have underground piping televised to review condition.
2. Monitor roof drains and leaders and remove debris as needed.

6.2.4 Plumbing Equipment
A. Existing Data
1. Water heating equipment consists of two (2) gas fired water heaters with coils in water storage tanks. Both units are fired with natural gas and are rated at 399999 BTU's input. Water heaters output water temperatures of 120°F to plumbing fixtures throughout the entire facility.
2. Circulating pumps are inline Bell and Gossett and are located in the second floor mechanical space.
3. A booster water heater for the dishwasher is located in the kitchen below the dishwasher.

B. Observations
1. A reduced pressure zone backflow preventer serving the boiler make-up water is leaking.
2. Water softening equipment is in good condition and is well maintained.
3. Water heating equipment is in good condition and is well maintained.
4. Thermometers, valve and component are all in good condition.

C. Recommendations
1. Other than the piping items covered under the piping section of this study, the equipment is a good working condition and no upgrades are required at this time.

6.2.5 Plumbing Fixtures
A. Existing Data
1. General
   • Water closets are a combination of vitreous china tank type and flush valve and majority appear to be original.
   • Urinals are vitreous china with flush valves.
   • Lavatories in individual toilets are vitreous china and are either wall hung with hot and cold faucet lever handles, or wall hung with hot and cold metering faucets.
• Wash basins are present in larger public toilet spaces with star type faucet controls. Washbasins are also found in other miscellaneous area such as the tech lab.

• Drinking fountains are stainless steel, semi-recessed, electric water coolers located in several hallways.

• Hose bibs are frost proof type with backflow preventer.

• Emergency eyewash station is located in communal space between science labs.

B. Observations

1. Plumbing fixtures are in generally good operating condition.

2. Eyewash station is clean and accessible. A floor drain could be installed below to collect spillage.

3. ADA standards for fixtures or clearances in all restrooms should be verified.

4. Water coolers are in good condition and are in good working order.

5. Soap dispensers in multiple locations appear to be mounted very high or behind / above basins. The accessibility for children should be verified.

6. Rest Room 358

   • No Escutcheon on water supplies through walls.
   • Lavatory needs safety covers for piping below basin.

7. Girls 132

   • Washbasin faucet control is not ADA compliant and should be replaced.

8. Custodial 139

   • Vacuum breaker and faucet could be replaced

9. Science Lab 525

   • All lab faucet aerators could be replaced with a fixed type.

10. Home Economics 201

   • PVC p-traps under sinks could be replaced with higher quality waste piping, but the piping appears to be in good condition currently.

11. Boys Locker Room 229

   • Some toilet seats are discolored and should be replaced.
   • ADA shield or piping guards should be added to piping located below the lavatory fixtures.
   • Shower facilities have ADA complaint shower areas.

12. Tech Lab 218

   • Wash basin has star type faucet control and is not ADA compliant.
13. Kitchen

- Numerous vacuum breakers serving sprayers were installed very close to flood rim level of fixtures. Elevating them to a height of 7’-6” off the floor would be better practice. In the current configuration it is possible for a sprayer to be left in a dirty bowl on the counter for example.

- Hand sink is dripping. Aerator should be replaced.

- Lavatory piping guards should be provided under hand wash sink.

- A vent for the exterior interceptor could not be located.

14. Kindergarten 333

- Lavatories piping guards should be provided under the basin.

- Bubbler faucet is currently turned off due to excessive spray pressure. Faucet should be replaced.

C. Recommendations

1. Overall plumbing fixtures are in good condition, but could be updated to new water conserving fixtures and ADA requirements.

2. Items for individual rooms listed under observations should be addressed. Similar rooms not listed should be verified for repeat issues.
7. HVAC SYSTEMS
The following report is the result of a site visit by Jason Testin of Fredericksen Engineering Inc. that occurred on September 26, 2014. Site observations, construction plan review, and interviews with staff were all used in the preparation of this report.

7.1 Darlington High School (DHS)
The original building was constructed in 1964, with additions being constructed in 1969 and 1976. Remodeling to the auditorium HVAC system occurred in 2008.

7.1.1 Heating System

A. Existing Conditions – Heating System
1. Two boilers make up the building boiler plant. Each boiler is a DeDietrich hot water boiler, each fired with natural gas. Each boiler has a capacity of 2,474,000 btu. The boilers were installed in 2002.
2. The piping and pumping system for the boilers consists of a single circuit system with a stand-by pump. If the primary pump fails, the secondary (stand-by) pump will provide hot water circulation to the system.
3. The pumps are constant flow pumps and 3-way valves are utilized at the heating coils.

B. Observations
1. According to information obtained by the Owner, the boiler plants have no reserve capacity at this point, as both boilers are brought online during periods of colder weather.
2. The boiler plant is in very good condition. With recommended maintenance, the boilers should continue to serve the facility for several more years.
3. Boiler water chemical systems are in place and appear to function as intended.
4. According to information obtained by the Owner, there is a lack of isolation valves throughout the piping system. Anytime there is work that needs to be done on the system, most, if not all of the system needs to be drained before work can begin.
5. Insulation at most piping is of adequate thickness and in fair condition.
6. Thermometers and gauges are present and appear to be working at all locations.
7. Piping is adequately supported where observed either by hangers or floor supports.
8. According to information obtained by the Owner, the heating system has troubles heating the rooms at the end of pipe loops due to the 3-way valves on all of the heating coils.

C. Recommendations
1. Continue preventative maintenance on the system.
2. Any future additions or construction will require the addition of boiler capacity to serve the additional spaces.
3. During any renovations, additions or work on the existing piping that requires the system to be drained, it is recommended that isolation valves be installed in loops of the hot water piping to improve isolation capabilities in the system.
4. During any renovations or additions, it is recommended that the hot water pumps be replaced with variable flow pumps controlled by variable frequency drives. The 3-way valves at the heating coils would be replaced with 2-way valves.

7.1.2 Ventilation and Air Conditioning Systems

A. Existing Data

1. There are five systems that provide ventilation for the facility. The five systems are classroom unit ventilators, constant volume air handling systems, variable volume air handling systems, constant volume fan coils and furnaces.

2. The High School classrooms and Library are ventilated using classroom unit ventilators. Unit ventilators house a fan, hot water heating coil, fresh air and return air dampers and controls in a single cabinet mounted in the classroom. Hot water piping is run to each unit ventilator. The unit ventilators are mounted on the perimeter walls. Horizontal unit ventilators hung from structure are utilized in the weight room, fitness room and tech. ed. area.

3. The gym is served by a constant volume air handling unit. Constant volume systems consist of a central supply fan, which contains a heating coil, fresh air and return air dampers. A room thermostat is used to control the temperature of the air supplied to the space.

4. The auditorium is served by a constant volume air handling unit. Constant volume systems consist of a central supply fan, which contains a heating coil, DX cooling coil, associated air cooled compressor condensing unit, fresh air and return air dampers. A room thermostat is used to control the temperature of the air supplied to the space.

5. The AG Shop and AG Classroom areas are served by a constant volume air handling unit with hot water booster coils. Constant volume systems with booster coils consist of a central supply fan, which contains fresh air and return air dampers. Hot water booster coils are utilized to control the temperature of the individual rooms. The booster boil is controlled by a room temperature sensor.

6. The drama classroom is served by a furnace. A furnace consists of a central supply fan, hot water coil, DX cooling coil and associated air cooled compressor condensing unit.

7. The offices are served by a constant volume fan coil unit. Constant volume fan coil units consist of a central supply fan, DX cooling coil and associated air cooled compressor condensing unit. A room thermostat is used to control the temperature of air supplied to the space. Heating is provided by hot water fin pipe radiation in each space.

8. The server room is served by two (2) packaged window AC units.

9. Hot water cabinet heaters heat all of the entrance vestibules. A cabinet heater utilizes a fan, a heating coil and a return air damper. Hot water piping is run to each cabinet heater. A room thermostat is used to control the cabinet heater.
B. Observations

1. Continue preventative maintenance on the existing equipment.

2. Almost all of the unit ventilators are the original unit from 1964. The units have exceeded the life expectancy. As some of the units have failed, new units have been furnished and installed.

3. According to information obtained by the Owner, the horizontal unit ventilators have vibrated internally enough to break internal components over the years.

4. The unit ventilators serving the metals shop and locker rooms are currently not operational.

5. The exhaust serving the locker room area is currently not operational.

6. Door transfer grilles or sidelight grilles are utilized throughout the building.

7. Classrooms 29 and 30 have duct routed from the vertical unit ventilators to a roof hood for the outside air. Due to the length of ductwork and the limited power of the unit ventilator fans, outside air is not being pulled into the unit and distributed into the classrooms.

8. If there are any renovations made to the classrooms that would remove the unit ventilators and install a different HVAC system, the door transfer grilles would need to be removed in order to comply with the current codes.

9. Portable dehumidification units are required to run in the gym in order to reduce humidity to an acceptable level.

10. The gym air handling units are the original units from 1964. The units have exceeded the life expectancy.

11. According to information obtained by the Owner, the unit serving the auditorium has adequate heating and cooling capabilities but is does produce some fan when run during a quiet performance.

12. The auditorium air handling unit was installed in 2008 and is in good condition.

13. When the kitchen hoods were upgraded, not make-up air was added to the space. This has resulted in a negative pressure in the building when the hoods are run.

14. There currently is no make-up air supplied to the metals area to account for the welding exhaust.

15. Currently, there is no exhaust in the AG shop. When the class is working on cars, carbon monoxide can accumulate in the space unless the overhead door is open.

16. The AG air handling unit is undersized in both the heating and cooling season. The Owner has reported that the space is warm in the summer time and cold in the winter time. The unit was installed in 1976 and has exceeded the life expectancy.

17. The Special Education air handling unit was installed in 2009. The unit is in good condition. The air handling unit does tend to fight with the unit ventilators that serve the same space due to the units being controlled by separate thermostats. The air handling unit and associated vav boxes are controlled by DDC controls while the unit ventilators are controlled by pneumatic controls. This difference can result in temperature complaints in the spaces.

18. The Drama classroom furnace was installed in 2007 and is in good condition.

19. The two (2) window AC units serving the server room are inadequate to cool the space.
C. Recommendations

1. Continue preventative maintenance on the systems.
2. Plans should be made for the replacement of the aging unit ventilators.
3. Plans should be made for the replacement of the horizontal unit ventilators.
4. Plans should be made for the design and installation of a new exhaust system and unit ventilators serving the locker rooms.
5. Plans should be made for the rerouting of the outside air ductwork through the roof above the unit ventilators serving Classrooms 29 and 30 to allow outside air to reach the spaces.
6. Plans should be made for the replacement of the aging gym air handling units. New air handling units should include cooling coils to allow a dehumidification cycle in order to control the humidity level in the gym.
7. Plans should be made for the replacement of the auditorium air handling unit supply fan motor. The new motor would include a variable frequency drive to allow single zone variable air volume control.
8. Plans should be made for the installation of gas fired make-up air units to serve the kitchen and the metals areas. The units would be interlocked with the kitchen hoods and the welding exhaust.
9. Plans should be made for the installation of a point source capture exhaust system in the AG shop to exhaust the carbon monoxide while working on cars.
10. Plans should be made for the replacement of the aging air handling system serving the AG shop and classroom. The new unit and ductwork would be sized adequately to meet the demands of the spaces.
11. Plans should be made for the removal of the unit ventilators that serve the Special Education area that is also served by the variable air volume system.
12. Plans should be made for the installation of a split system air conditioning system to serve the data room.

7.1.3 Control Systems

A. Existing Data

1. The majority of the school is served by a pneumatic control system.
2. Approximately eight rooms have been converted to a DDC control system.

B. Observations

1. The limitations of the pneumatic system do result in comfort complaints. Pneumatic systems require frequent calibration to maintain accuracy. The newer digital controls are more accurate and more flexible. In addition, the industry has made such a complete changeover to digital controls that it is becoming difficult to find good pneumatic service technicians.

C. Recommendations

1. Continue to maintain and operate the pneumatic control system as long as the current mechanical equipment remains. When any renovations to the existing equipment are made, a changeover to digital controls is strongly recommended.
7.2 Darlington Elementary / Middle School (DEMS)
The original building was constructed in 1995 with no additions being constructed.

7.2.1 Heating System

A. Existing Data
1. Three boilers make up the building boiler plant. Each boiler is a DeDietrich hot water boiler, each fired with natural gas. Each boiler has a capacity of 1,471,000 btu. The boilers were installed in 2011.
2. The piping and pumping system for the boilers consists of a single circuit system with a stand-by pump. If the primary pump fails, the secondary (stand-by) pump will provide hot water circulation to the system.
3. The pumps are constant flow pumps and 3-way valves are utilized at the heating coils.

B. Observations
1. According to information obtained by the Owner, the boiler plants have additional reserve capacity at this point; one boiler is a redundancy boiler.
2. The boiler plant is in very good condition. With recommended maintenance, the boilers should continue to serve the facility for several more years.
3. Boiler water chemical systems are in place and appear to function as intended.
4. None of the piping in the boiler room is insulated. This results in the boiler room being very hot when the boilers are running.
5. Thermometers and gauges are present and appear to be working at all locations.
6. Piping is adequately supported where observed either by hangers or floor supports.

C. Recommendations
1. Continue preventative maintenance on the system.
2. Plans should be made to insulate the hot water piping in the boiler room. The current installation is wasting energy as the heat is lost to the boiler room instead of being delivered to the rest of the building.
3. During any renovations or additions, it is recommended that the hot water pumps be replaced with variable flow pumps controlled by variable frequency drives. The 3-way valves at the heating coils would be replaced with 2-way valves.

7.2.2 Ventilation and Air Conditioning Systems

A. Existing Data
1. There are two systems that provide ventilation for the facility. The two systems are constant volume air handling systems and variable volume air handling systems.
2. Large volume spaces such as the gym and library are served by individual constant volume air handling units. Constant volume systems consist of a central supply fan, which contains a heating coil, fresh air and return air dampers. A room thermostat is used to control the temperature of the air supplied to the space. Each hot water coil has an in-line pump and three-way valve to circulate water through the coil. The unit serving the library also contains a DX cooling coil and an associated air cooled compressor condensing unit.
3. The classrooms and offices are served by multiple variable air volume air handling units. Variable volume systems consist of a central supply fan, which contains a DX cooling coil, hot water heating coil, fresh air and return air dampers. Variable air volume boxes with reheat coils are utilized to control the temperature of the individual rooms. The variable air volume box is controlled by a room temperature sensor.

4. Hot water cabinet heaters heat all of the entrance vestibules. A cabinet heater utilizes a fan, a heating coil and a return air damper. Hot water piping is run to each cabinet heater. A room thermostat is used to control the cabinet heater.

B. Observations
1. Continue preventative maintenance on the existing equipment.
2. The air handling units are all original from 1995 and are in good condition. With recommended maintenance, the units should continue to serve the facility for many more years.
3. According to information obtained by the Owner, the building currently has a positive pressure. The self-acting weighted relief damper does not operate correctly.

C. Recommendations
1. Continue preventative maintenance on the systems.
2. Plans should be made for the removal of the existing self-acting weighted relief system and install a powered relief system controlled by building pressure.

7.2.3 Control Systems

A. Existing Data
1. The entire school is served by a DDC control system.

B. Observations
1. Currently, two classrooms are served by one thermostat and one variable air volume box. This causes temperature complaints between the two rooms as one room may need heat while the other room may need cooling.

C. Recommendations
1. Plans should be made for the installation of additional variable air volume boxes to allow each classroom to have its own temperature control. Some piping mains will need to be upsized in this option to account for the additional vav boxes.
8. **ELECTRICAL SYSTEM**

The following report is the result of a site visit by Scott Pautz of Romes Design that occurred on September 26th, 2014. Site observations, construction plan documents, and interviews with staff were all used in the preparation of this report.

8.1 **Darlington High School (DHS)**

The Darlington High School building was constructed in 1964.

8.1.1 **Main Electrical Service Entrance**

**A. Existing Data**

1. The High School is served with underground utility metered electrical service – served from one pad mount exterior transformer located at West side of the school. The electrical meter is mounted on an exterior wall near the utility transformer.

2. The electrical service feed is routed underground from the pad mounted utility transformer and terminated in the main electrical room.

3. The electrical service is terminated at a Square D service rated electrical switchgear panel rated for 3000 amps, 120/208 volt, 3 phase, 4-wire and is located in the main electrical room. The service equipment is not original equipment and has been updated.

4. The electrical service disconnect is located within the main electrical switchgear lineup and is rated at 3000 amps.

5. Electrical service gear has space and spare circuit breakers available for use in an expansion.

6. The peak electrical load for this electrical service was 160 KW (Kilowatts) recorded in September of 2013. This equates to 556 amps.

7. The Owner did not report an issue with the exterior transformers or electrical service equipment.

8. The electrical utility company is Alliant Energy and the electrical meter is #716247570.

**B. Observations**

1. Electrical service equipment appears to good working condition and no issues were reported by the Owner.

2. Electrical service has TVSS (Transient Voltage Surge Suppression) installed at the main electrical service equipment - Citel AC Surge.

**C. Recommendations**

1. Continue preventative maintenance on the system.
8.1.2 Panel Boards

A. Existing Data

1. The panel boards observed in the Darlington High School building are manufactured by Square D and GE, comprised of recessed and surface mounted panels installed throughout the building.

2. Most electrical branch panels appear to be the original panel boards from the original construction. Main electrical switchgear and some newer Square D panel boards were noted.

3. It was noted that most branch panel board directories are hand written

4. Overall the panel boards appear to be in working condition. Original branch panel boards have limited or no space available for expansion.

5. Engraved nameplates were not located on all panel boards

B. Recommendations

1. All typed panel board directories that have hand written sketches should be retyped and reinserted into panel holder.

2. Future expansions and renovations should include the replacing and upgrading of original branch panel boards.

8.1.3 Life Safety

A. Existing Data

1. An 80 kW, 120/208 volt, 3 phase, 4-wire Kohler emergency power generator is located at the exterior of the building in a weatherproof housing. The generator is powered by natural gas and appears to provide emergency power to Life Safety and Non Life Safety “Equipment” loads. The emergency power generator has two circuit breakers installed within the unit. Circuit breaker #1 is rated at 50 amps and is the Life Safety branch of the emergency power system. Circuit breaker #2 is rated at 350 amps and is the Non-Life Safety branch of the emergency power system. This is not original equipment and has been updated.

2. Generator circuit breakers #1 and #2 each feed an automatic transfer switch (ATS). In the event that normal power is lost each ATS will transfer power from normal utility power to emergency generator power.

3. The Life Safety ATS is appears to be original building electrical equipment. This transfer switch provides power to an emergency panel located adjacent to it.

4. The Non Life Safety transfer switch is rated at 400 amps – 3 phase, manufactured by Kohler. This transfer switch serves an emergency panel board in an adjacent room. This is not original electrical building equipment and has been updated.

5. The Owner has reported they are not performing a weekly or monthly test of the emergency system under load.

6. Exit signs appear to be LED and incandescent / fluorescent type.
B. Observations

1. Exit signs were not all operating at the time of the site assessment. Coverage for exit signs appeared to be adequate and code compliant.

2. The generator and transfer switches appear to be in working condition with no reported problems by the Owner.

3. Emergency electrical system appears to provide separation of Life Safety and Non Life Safety systems as defined by the National Electrical Code (N.E.C.). A more in-depth investigation of circuiting would need to be completed in order to fully verify the emergency system has complete separation of systems.

4. Exterior emergency egress lighting is not present.

5. A generator load bank was not present.

6. Required interior emergency egress lighting appears to be adequate in coverage.

C. Recommendations

1. Review existing circuiting of the emergency Life Safety Panel and verify all stated loads are N.E.C. defined “Life Safety” loads to ensure system is code compliant.

2. Perform emergency egress light testing to ensure light levels are at code required levels. Current State of Wisconsin requires a minimum 1.0 foot-candle average with a maximum 40:1 maximum to minimum ratio.

3. Install exterior emergency egress lighting at exterior egress doors.

4. Update signage of all emergency panels. Provide new engraved panel tag, red in color, to signify existing panel boards are emergency panels – industry standard.

5. The following is information on current egress Life Safety code for WI. Any areas scheduled for remodel that include egress areas will need to be addressed with this item:

   Life Safety (building egress) code compliance

   “State of Wisconsin’s current life safety code is provide by the National Fire Protection Association (NFPA). As part of this code, it requires that certain areas be provided with egress illumination for building spaces, for both normal and emergency lighting situations (exit signs and emergency lighting). Within the last decade, emergency egress lighting requirements have become more restrictive in their lighting performance than they had been in previous years. A requirement to provide exterior emergency egress lighting was also adopted that requires exterior egress doorways to have some type of emergency lighting as part of a normal installation.”
8.1.4 Devices

A. Existing Data
1. Existing receptacles appear to be 20 amp devices with grounding pin.

B. Observations
1. All devices observed appeared to be in working condition. The Owner did not report any problems or deficiencies.
2. Devices appear to have GFI protection where required by current codes.

C. Recommendations
1. None.

8.1.5 Lighting Fixtures and Controls

A. Existing Data
1. The facility is served primarily with T8 lamped fluorescent fixtures and electronic ballasts. Lamp: GE manufacturer – 4'-0" fluorescent T8, 32w, Ecolux – 3500 kelvin color temperature.
2. Corridor light fixtures are surface mounted type, continuous row, installed horizontally to corridor walls.
3. Typical classroom lighting utilizes continuous row pendant mount linear fluorescent type lighting.
4. Linear fluorescent strip lighting is located in mechanical type spaces.
5. Exterior lighting utilizes high intensity discharge (HID) lamping. The owner has stated these lamps are Metal Halide type.
6. Exterior lights at school entrances are wall mounted. Fixtures are controlled via photocell and time clock combination.
7. Exterior parking lot fixtures are flood light type mounted on concrete light poles. Fixtures are controlled via photocell and time clock combination.

B. Observations
1. Interior automatic lighting shutoff controls were not present in the facility – all interior lighting is controlled via manual wall switches.
2. Multi row switching was noted in some spaces such as classrooms
3. Corridor lighting is controlled via manual light switches located within the corridor.
4. Exterior parking lot fixtures are not dark sky compliant.
5. It appeared that such spaces as the school corridors may have light levels considerably above industry and code levels.
C. Recommendations

1. Current State of Wisconsin energy codes require automatic shut off controls in most spaces. This can be accomplished in a variety of ways – occupancy sensors or possibly a time clock type system via light relay panel. Investigate the installation of automatic shut off lighting controls in all spaces to reduce lighting electrical consumption.

2. Measure light levels in spaces to determine foot-candle levels. Reduce lighting in these spaces to industry standard and code levels to reduce energy consumption. One area of note is the Corridor lighting, these spaces appear to have light levels considerably above industry standards.

3. Research Focus On Energy rebates to aid in any lighting upgrades.

4. Exterior lighting: Consider replacement of exterior wall pack and pole mount HID light fixtures with LED type lighting fixtures to reduce energy consumption when HID lamps need replacement. LED advantages listed below.

   - LED lighting is an energy efficient light source that can provide excellent lighting uniformity. Typically LED lighting will produce more light for less energy required.

   - The LED light source can be rated as high as 100,000 rated life hours as compared to 24,000 rated life hours for HID lamping. This extended lamp life will not only aid in less energy consumption but less time will be required for re-lamping and cost of new lamping.

   - LED lighting will perform excellently in cold temperatures.

   - LED lighting has instant on and off and does not require a warm up time. With no warm up time required parking lot lighting can incorporate more detailed lighting controls such as occupancy sensors.

   - LED lighting is making rapid advances in the amount of light produced for energy used. This will continue to separate LED lighting from other light source options in energy consumption.

   - LED exterior lighting typically can be multilevel switched and allows for the opportunity to utilize exterior occupancy sensors for parking lot type spaces.

5. Dark sky compliant light fixtures should be utilized in replacement of any exterior lighting fixtures.


   - LED lighting is on energy efficient light source that can provide excellent lighting uniformity. Typically LED lighting will produce more light for less energy required.

   - The LED light source can be rated as high as 100,000 rated hours of life expectancy as compared to 30,000 rated hours for fluorescent lamping. This extended lamp life will not only aid in less energy consumption but less time will be required for re-lamping and cost of new lamping.
8.1.6 Fire Alarm System

A. Existing Data
   1. The fire alarm control panel is manufactured by Notifier. This fire alarm control panel / system is located in the main office space. The fire alarm system is a Notifier 500 and appears to be the original fire alarm control panel.

B. Observations
   1. Existing fire alarm horn / strobes: Corridors are required to have notification device located within 15’ from end of corridor. It appears as if not all corridors are compliant with this requirement.
   2. Fire alarm pull stations are located at exterior egress doors. It was noted that not all exterior doors have fire alarm pull station located within required distance of the exterior door required by NFPA.
   3. Fire zone map was not present at the main fire panel.
   4. Classrooms appear to only have fire alarm strobe units installed without the presence of a fire alarm horn device in the classroom; they may not meet current code required decibel levels.
   5. It was noted that not all spaces may satisfy coverages required by current codes.

C. Recommendations
   1. Relocate add additional fire alarm horn / strobe devices within 15’-0” of ends of corridors.
   2. Provide testing of fire alarm system and verify all classrooms and occupied spaces meet current code required audible decibel levels.
   3. Provide regular testing of the fire alarm system.
   4. Replace fire alarm control panel with an upgraded system.

8.2 Darlington Elementary / Middle School (DEMS)
The Darlington Elementary and Middle School building was constructed in 1996.

8.2.1 Main Electrical Service Entrance

A. Existing Data
   1. The Middle / Elementary School is served with underground utility metered electrical service – served from one pad mount exterior transformer located at North side of the school. The electrical meter is located at the exterior and mounted on an exterior wall near the utility transformer.
   2. The electrical service feed is routed underground from the pad mounted utility transformer and terminated in the main electrical room.
   3. The electrical service is terminated at a Cutler Hammer service rated electrical switchgear panel rated for 2000 amps, 120/208 volt, 3 phase, 4-wire and is located
in the main electrical room. The service equipment appears to be original equipment from the 1996 construction.

4. The electrical service disconnect is located within the main electrical switchgear lineup and is rated at 2000 amps.

5. The peak electrical load for this electrical service was 247 KW (Kilowatts) recorded in September of 2013. This equates to 858 amps.

6. The Owner did not report an issue with the exterior transformers or electrical service equipment.

7. The electrical utility company is Alliant Energy and the electrical meter is #708908973.

B. Observations

1. Electrical service equipment appears to good working condition and no issues were reported by the Owner.

2. Main electrical service room containing the electrical service equipment appears to be used as a storage room as well, not allowing proper access to equipment and violating National Electrical Code (N.E.C.) clearances.

3. Electrical service has TVSS (Transient Voltage Surge Suppression) installed at the main electrical service equipment - Leviton 52120-MS.

C. Recommendations

1. Main electrical service room should only house electrical and system equipment and should not be utilized for a storage room. Remove storage items and provide proper clearances for accessing all equipment within the room.

2. Continue preventative maintenance on the system.

8.2.2 Panel Boards

A. Existing Data

1. The panel boards observed in the Darlington Middle / Elementary building are manufactured by Cutler Hammer, comprised of recessed and surface mounted panels installed throughout the building.

2. Electrical branch panels appear to be the original panel boards from 1996 construction. These panel boards appear to be in good working condition.

3. It was noted that typed panel board directories are present, also noted that revisions to circuiting have been made via handwriting on panel directories.

4. Overall the panel boards appear to be in good working condition with minimal spare circuit breaker space present at some locations.

5. Engraved nameplates for panel boards were present.

B. Recommendations

1. All typed panel board directories that have hand written sketches should be retyped and reinserted into panel holder
8.2.3 Life Safety

A. Existing Data

1. A 20 kW, 120/208 volt, 3 phase, 4-wire Detroit Diesel emergency power is located in a generator room with the only access via an exterior entry. The generator is powered by natural gas and appears to provide emergency power for emergency egress lighting. One Automatic Transfer Switch (ATS) appears to be present transferring power from normal utility power to emergency generator power.

2. The existing ATS is a 100 amp – 3 phase Detroit Diesel automatic transfer switch powered from the emergency generator.

3. Existing ATS provides power transfer to emergency panel located within same room as the emergency generator and ATS. This existing panel is labeled Panel “E”.

4. The Owner has reported they are not performing a weekly or monthly test of the emergency system under load.

5. Exit signs are present at all exterior doors and hallway intersections. Exit signs appear to be LED type. Exit signs are white thermoplastic type with red letters.

B. Observations

1. Exit signs were all operating at the time of the site assessment. Coverage for exit signs appeared to be adequate and code compliant.

2. The generator and transfer switch appear to be in good condition with no reported problems by the Owner.

3. Emergency electrical system appears to only power emergency egress loads defined by the National Electrical Code (N.E.C.). A more in-depth investigation of circuiting would need to be completed in order to fully verify the emergency system only powers defined emergency egress loads.

4. Exterior emergency egress lighting is not present.

5. A generator load bank was not present.

6. Required interior emergency egress lighting appears to be adequate in coverage.

C. Recommendations

1. Review existing circuiting of the emergency Panel E and verify all stated loads are N.E.C. defined “Life Safety” loads to ensure system is code compliant.

2. Perform emergency egress light testing to ensure light levels are at code required levels. Current State of Wisconsin requires a minimum 1.0 foot-candle average with a maximum 40:1 maximum to minimum ratio.

3. Install exterior emergency egress lighting at exterior egress doors – not required at time of design.

4. Update signage of emergency Panel E. Provide new engraved panel tag red in color to signify existing panel board is an emergency panel – industry standard.
5. The following is information on current egress Life Safety code for WI. Any areas scheduled for remodel that include egress areas will need to be addressed with this item:

Life Safety (building egress) code compliance

“State of Wisconsin’s current life safety code is provide by the National Fire Protection Association (NFPA). As part of this code, it requires that certain areas be provided with egress illumination for building spaces, for both normal and emergency lighting situations (exit signs and emergency lighting). Within the last decade, emergency egress lighting requirements have become more restrictive in their lighting performance than they had been in previous years. A requirement to provide exterior emergency egress lighting was also adopted that requires exterior egress doorways to have some type of emergency lighting as part of a normal installation.”

8.2.4 Devices

A. Existing Data

1. Existing receptacles appear to be 20 amp devices with grounding pin.

B. Observations

1. All devices observed appeared to be in good working condition. The Owner did not report any problems or deficiencies.
2. Devices appear to have GFI protection where required by current codes.

C. Recommendations

1. None.

8.2.5 Lighting Fixtures and Controls

A. Existing Data

1. The facility is served primarily with T8 lamped fluorescent fixtures and electronic ballasts. Lamp: GE – 4’-0” fluorescent T8, 32w, Ecolux – 3500 kelvin color temperature.
2. Most fixtures appear to be recessed acrylic type light fixtures. Library and computer lab type spaces utilize recessed parabolic type fixtures. Linear fluorescent strip lighting is located in mechanical type spaces.
3. Exterior lighting utilizes high intensity discharge (HID) lamping. The owner has stated these lamps are Metal Halide type.
4. Exterior lights at school entrances are installed as surface and recess mounted. Fixtures are controlled via photocell and time clock combination.
5. Exterior parking lot fixtures are flood light type mounted on concrete direct burry light poles. Fixtures are controlled via photocell and time clock combination.

B. Observations

1. Interior automatic lighting shut off controls were not present in the facility – all interior lighting is controlled via manual wall switches.
2. Dual level switching of light fixtures was noted in some spaces.

3. Corridor lighting is controlled via manual keyed light switches located within the corridor.

4. Exterior parking lot fixtures are not dark sky compliant.

C. Recommendations

1. Current State of Wisconsin energy codes require automatic shut off controls in most spaces. This can be accomplished in a variety of ways – occupancy sensors or possibly a time clock type system via light relay panel. Investigate the installation of automatic shut off lighting controls in all spaces to reduce lighting electrical consumption.

2. Research Focus On Energy rebates to aid in any lighting upgrades.

3. Exterior lighting: Consider replacement of exterior wall pack and pole mount HID light fixtures with LED type lighting fixtures to reduce energy consumption when HID lamps need replacement. LED advantages listed below.

   - LED lighting is an energy efficient light source that can provide excellent lighting uniformity. Typically LED lighting will produce more light for less energy required.
   - The LED light source can be rated as high as 100,000 rated hours of life expectancy as compared to 24,000 rated life hours for HID lamping. This extended lamp life will not only aid in less energy consumption but less time will be required for re-lamping and cost of new lamping.
   - LED lighting will perform excellently in cold temperatures.
   - LED lighting has instant on and off and does not require a warm up time. With no warm up time required parking lot lighting can incorporate more detailed lighting controls such as occupancy sensors.
   - LED lighting is making rapid advances in the amount of light produced for energy used. This will continue to separate LED lighting from other light source options in energy consumption.
   - LED exterior lighting typically can be multilevel switched and allows for the opportunity to utilize exterior occupancy sensors for parking lot type spaces.

4. Dark sky compliant light fixtures should be utilized in replacement of any exterior lighting fixtures.


   - LED lighting is on energy efficient light source that can provide excellent lighting uniformity. Typically LED lighting will produce more light for less energy required.
   - The LED light source can be rated as high as 100,000 rated hours of life expectancy as compared to 30,000 rated hours for fluorescent lamping. This extended lamp life will not only aid in less energy consumption but less time will be required for re-lamping and cost of new lamping.
8.2.6 Fire Alarm System

A. Existing Data

1. The fire alarm control panel is manufactured by Edwards. This fire alarm control panel / system is located in the main electrical room. The system is an Edwards EST – FA - LSS4/12 control panel.

B. Observations

1. Existing fire alarm horn / strobes: Corridors are required to have notification device located within15’ from end of corridor; it appears as if not all corridors are compliant with this requirement.
2. Fire alarm pull stations are located at exterior egress doors.
3. Observed fire alarm pull stations are installed at ADA compliant heights.
4. Fire zone map was not present at the main fire panel.
5. Classrooms appear to only have fire alarm strobe units installed without the presence of a fire alarm horn device in the classroom; they may not meet current code required decibel levels.

C. Recommendations

1. Relocate or add additional fire alarm horn / strobe devices within 15’-0” of ends of corridors.
2. Provide testing of fire alarm system and verify all classrooms and occupied spaces meet current code required available decibel levels.
3. Provide regular testing of the fire alarm system.

- Future remodeling should consider utilizing LED lighting.
9. TECHNOLOGY SYSTEMS
The following report is the result of a site visit by Scott Pautz of Romes Design that occurred on September 26th, 2014. Site observations, construction plan documents, and interviews with staff were all used in the preparation of this report.

9.1 Darlington High School (DHS)
The Darlington High School building was constructed in 1964.

9.1.1 Data / Voice Systems

A. Existing Observed Data

1. Phone utility service cabling enters the building in an electrical room located near main boiler / mechanical space via underground conduit.

2. Fiber optic cable is terminated on a Siecor fiber optic patch panel located in the telecommunications closet adjacent to the library. From this location fiber optic cable is routed to the Elementary / Middle School as well as the various telecommunications closets / locations.

3. There are several telecommunications termination closet / locations throughout the building serving their area voice/data needs.

4. The data network main distribution is located in the main telecommunication room. This location routes data cabling to several data closets located throughout the building. Area data outlets are served via these various data closet / termination locations.

5. Existing observed data cabling was a mixture of category 5 and category 6 cabling.

6. Network system switches are manufactured by Cisco.

7. APC Smart 750 UPS units were noted at data termination racking locations and are mounted at the bottom of the data racking.

8. Data equipment is manufactured by Hubbell.

9. A wireless network system appears to be installed within the school.

B. Observations

1. Multiple levels of cabling exist.

C. Recommendations

1. Continue to upgrade data cabling to Category 6 in areas of remodel.

2. Provide additional wire management at telecommunications racking locations.

3. Provide dedicated room for telecommunications racking locations.

9.1.2 Paging

A. Existing Observed Data

1. Rauland Telecenter paging phone is located at the main school reception desk.
2. Recessed paging speaker clock combinations are located in most rooms and wall mounted speakers are located in corridors.

B. Recommendations

1. Upgrade paging speakers in areas of remodel.

9.1.3 Clock

A. Existing Observed Data

1. The original Simplex 6100 wired clock system is still operational; due to replacement costs of clocks the Owner stated clocks are replaced with new atomic standalone wireless versions. Various wireless clock manufacturers where noted.

2. Wall mounted clocks were noted in most spaces including corridors, offices, and classrooms.

B. Recommendations

1. Continue to utilize wireless atomic clocks in the event of a system clock failure. Provide consistency when purchasing new atomic clocks. Synchronized wireless clock systems are available to provide consistency in manufacturer as well as a complete and synchronized system.

9.1.4 Security/Access Control

A. Existing Observed Data

1. Security head end equipment is manufactured by Continental Access, model Super Two and is located in the main telecommunications room.

2. Six egress exit doors each have an exterior cameras, Aiphone communication device, and proximity card readers. Security camera monitor and communication is located at the main school reception desk.

3. Interior security cameras are not present.

4. Remaining egress exit doors are manually locked and are not monitored.

5. Door position switches are not present.

B. Recommendations

1. Monitor exterior doors with door position switches.

2. Installation of interior cameras and security motion sensors.

3. Installation of security cameras at the exterior to monitor entire campus.
9.2 Darlington Elementary / Middle School (DEMS)
The Darlington Elementary and Middle School building was constructed in 1996.

9.2.1 Voice / Data Systems

A. Existing Observed Data

1. Phone utility service cabling enters the building in the main electrical room via underground conduit. From this main voice termination point, it appears the cabling system is routed to a termination backboard at the main telecommunications room.

2. Fiber optic cable is routed from the High School and enters the building via surface mounted conduit on the exterior wall adjacent to the existing generator room. The fiber optic cable appears to be routed to the main electrical room and terminated on a Siecor fiber optic patch panel. From this location it appears as if fiber optic cable is distributed throughout building to telecommunication termination location / closets.

3. There are several telecommunications termination location / closets located throughout the building serving their area voice/data needs.

4. The data networks main distribution is located in the main telecommunication room. This location routes fiber optic cabling to several telecommunication termination location / closets located throughout the building.

5. Existing observed data cabling was a mixture of category 5 and category 6 cabling.

6. Network system switches are manufactured by Cisco.

7. APC Smart 750 UPS units were noted at all telecommunication termination location / closets and are mounted at the bottom of the data racking.

8. Data equipment is mounted within aluminum floor mounted telecommunications racking.

9. The voice network system is terminated at phone blocks located in the main telecommunication room and distributed to closets located throughout the building.

10. Wireless Access Points (WAP) were noted in the corridors throughout the building. These units are wall mounted just below finished ceiling.

B. Observations

1. Provide additional wire management at telecommunication termination racking locations.

C. Recommendations

1. Continue to upgrade cabling to Category 6 cable in areas of remodel.

2. Provide dedicated room for telecommunications racking locations.
9.2.2 Paging

A. Existing Observed Data

1. A Telecore paging system is located in the main telecommunications room.

2. Master paging phone, manufactured by Telecore, is located at the main school reception desk.

3. Ceiling mounted recessed speakers are installed throughout the entire building.

B. Recommendations

1. No recommendations

9.2.3 Clock

A. Existing Observed Data

1. The original wired clock system is still operational; due to replacement costs of clocks the Owner stated clocks are replaced with new atomic wireless versions. Various wireless clock manufacturers were noted.

2. Wall mounted clocks were noted in most spaces including corridors, offices, and classrooms.

B. Recommendations

1. Continue to utilize wireless atomic clocks in the event of a system clock failure. Provide consistency when purchasing new atomic clocks. Synchronized wireless clock systems are available to provide consistency in manufacturer as well as a complete and synchronized system.

9.2.4 Security/Access Control

A. Existing Observed Data

1. Security head end equipment is manufactured by Continental Access, model Super Two and is located in the main telecommunications room adjacent to high school office.

2. Five egress exit doors each have an exterior cameras, Aiphone communication device, and proximity card readers. Security camera monitor and communication is located at the main school reception desk.

3. Interior security cameras are not present.

4. Remaining egress exit doors are manually locked and are not monitored.

5. Door position switches are not present.

B. Recommendations

1. Monitor exterior doors with door position switches.

2. Installation of interior cameras and security motion sensors.

3. Installation of security cameras at the exterior to monitor entire campus.
9.2.5 Sound reinforcing

A. Existing Observed Data

1. Sound reinforcing system was noted in Kindergarten and First Grade rooms.
2. System speakers were wall mounted within room.