

Requirement Detail

by Asset Name and Category

DENFELD HS

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld - Parking
Asset Number: 215c

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Vehicular Paving: Parking Lot Area Adjacent to Football Field | | |
| Linked System | Parking Lots | Inspection Date | 08/01/2006 |
| Prime System | Paving and Surfacing | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Inspec | Actual Cost | 0 |
| Action Date | 08/01/2009 | Total Estimated Cost: | 2,360 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Parking Lot adjacent to Football Field | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Deteriorated parking lot.

PHOTOS



Parking Lot

-

ACTION DESCRIPTION

Fill in bituminous pavement section at parking lot entrance along 4th street, southeast by stadium.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld - Parking
Asset Number: 215c

| | | |
|-----------------------------|-------------------------------------|---------------------------------------|
| Requirement Name | Vehicular Traffic: Main Parking Lot | |
| Linked System | Parking Lots | Inspection Date 08/01/2006 |
| Prime System | Paving and Surfacing | Finish Date - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status Open |
| Inspector Name | Inspec | Actual Cost 0 |
| Action Date | 08/01/2007 | Total Estimated Cost: 118,000 |
| Funding Year | - | Funding Type - |
| Requirement Location | Main Parking Lot along 4th Street | Annual Energy/Ops Savings \$ - |
| Savings Description | - | |

REQUIREMENT DESCRIPTION

Deteriorated parking lot.

PHOTOS



Main Parking Lot

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ACTION DESCRIPTION

Overlay bituminous pavement.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld - Parking
Asset Number: 215c

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|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Vehicular Traffic: Parking Lot at Northwest Corner | | |
| Linked System | Parking Lots | Inspection Date | 08/01/2006 |
| Prime System | Paving and Surfacing | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Inspec | Actual Cost | 0 |
| Action Date | 08/01/2009 | Total Estimated Cost: | 5,900 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Parking Lot at NW Corner | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Deteriorated parking lot.

PHOTOS



Parking Lot

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ACTION DESCRIPTION

Seal coat bituminous pavement and replace broken section of portland cement concrete.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld - Parking
Asset Number: 215c

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|-----------------------------|--|-------------------------------------|------------|--|
| Requirement Name | Vehicular Traffic: Parking Lot | | | |
| Linked System | Parking Lots | Inspection Date | 08/01/2006 | |
| Prime System | Paving and Surfacing | Finish Date | - | |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Status | Open | |
| Inspector Name | Inspec | Actual Cost | 0 | |
| Action Date | 08/01/2012 | Total Estimated Cost: | 3,540 | |
| Funding Year | - | Funding Type | - | |
| Requirement Location | Parking Lot at North Side of High School | Annual Energy/Ops Savings \$ | - | |
| Savings Description | - | | | |

REQUIREMENT DESCRIPTION

Deteriorated parking lot.

PHOTOS



Parking Lot

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ACTION DESCRIPTION

Seal coat bituminous pavement. Existing pavement in good condition.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Life Safety

Asset Name: Denfeld - Sidewalks
Asset Number: 215d

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|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Pedestrian Paving: Sidewalk Along 4th Street | | |
| Linked System | Pedestrian Paving | Inspection Date | 08/01/2006 |
| Prime System | Paving and Surfacing | Finish Date | - |
| Priority | 1- Currently Critical (Immediately) | Status | Open |
| Inspector Name | Inspec | Actual Cost | 0 |
| Action Date | 08/01/2006 | Total Estimated Cost: | 5,900 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Sidewalk along 4th Street | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Deteriorated sidewalk.

PHOTOS



Sidewalk

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ACTION DESCRIPTION

Replace missing/broken portland cement concrete sidewalk (city's ?).

District: Duluth Public Schools
Facility: Denfeld High School
Category: Life Safety

Asset Name: Denfeld - Sidewalks
Asset Number: 215d

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|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Pedestrian Paving: Sidewalk Along 6th Street | | |
| Linked System | Pedestrian Paving | Inspection Date | 11/30/2006 |
| Prime System | Pedestrian Paving | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Inspec | Actual Cost | 0 |
| Action Date | 11/30/2007 | Total Estimated Cost: | 47,200 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Sidewalk along 6th Street | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Deteriorated sidewalk along 6th Street

PHOTOS

ACTION DESCRIPTION

Replace missing/broken portland cement concrete sidewalk

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld H. S. - Site
Asset Number: 215f

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|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Playfields: West Ball Fields | Inspection Date | 08/01/2006 |
| Linked System | Site Improvements | Finish Date | - |
| Prime System | Playing Fields | Status | Open |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Actual Cost | 0 |
| Inspector Name | Inspec | Total Estimated Cost: | 59,000 |
| Action Date | 08/01/2009 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement Location | West Ball Fields | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Deteriorated ball fields.

PHOTOS

ACTION DESCRIPTION

Regrade/reconstruct baseball/softball fields on west side of high school.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld H. S. - Site
Asset Number: 215f

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|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Site: Athletic Track | Inspection Date | 08/01/2006 |
| Linked System | Site Improvements | Finish Date | - |
| Prime System | Miscellaneous Structures | Status | Open |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Actual Cost | 0 |
| Inspector Name | Inspec | Total Estimated Cost: | 118,000 |
| Action Date | 08/01/2009 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement Location | Athletic Track | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Typical maintenance for athletic track of this type.

PHOTOS

ACTION DESCRIPTION

Repair any damaged areas on track and install new red urethane structural spray over entire track and field event areas.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Accessibility

Asset Name: Denfeld High School
Asset Number: 215

| | | |
|-----------------------------|---|---------------------------------------|
| Requirement Name | Equipment and Furnishings: Accessibility | |
| Linked System | Equipment and Furnishings | Inspection Date 11/12/2006 |
| Prime System | Equipment and Furnishings | Finish Date - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status Open |
| Inspector Name | JQP Inc. | Actual Cost 0 |
| Action Date | 11/12/2009 | Total Estimated Cost: 118,819 |
| Funding Year | - | Funding Type - |
| Requirement Location | Entire Facility | Annual Energy/Ops Savings \$ - |
| Savings Description | - | |

REQUIREMENT DESCRIPTION

This requirement includes accessibility issues related to high public use areas of the school, including auditoriums, stadiums, gymnasiums, ticket counters, and the main office. Items include: providing wheelchair viewing positions, providing access to the stage, providing an assistive listening system and lowering counters.

It also includes accessibility issues found in Specialty Areas (science labs, cooking labs, industrial arts areas, as well as the media center/library). Items include: providing accessible work stations in kitchens, providing accessible labs and lowering eyewashes.

PHOTOS



Equipment and Furnishings: Accessibility

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ACTION DESCRIPTION

Correct accessibility issues as required.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Accessibility

Asset Name: Denfeld High School
Asset Number: 215

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|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Interior Construction: Accessibility | | |
| Linked System | Interior Construction | Inspection Date | 11/12/2006 |
| Prime System | Interior Construction | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | JQP Inc. | Actual Cost | 0 |
| Action Date | 11/12/2009 | Total Estimated Cost: | 52,660 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Interior | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

This requirement includes accessibility issues encountered while you move through the school. Items include: providing elevator or ramp, adding/modifying handrails (only if the level is not served by an elevator or other accessible route), widening doors, replacing door hardware, eliminating protruding hazards and all permanent room identification signage as well as directional signage (adding signs, replacing signs and relocating signs).

PHOTOS



Interior Construction: Accessibility

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ACTION DESCRIPTION

Make necessary modifications to correct accessibility issues as needed.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Accessibility

Asset Name: Denfeld High School
Asset Number: 215

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|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Plumbing: Accessibility | Inspection Date | 11/12/2006 |
| Linked System | Plumbing | Finish Date | - |
| Prime System | Plumbing | Status | Open |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Actual Cost | 0 |
| Inspector Name | JQP Inc. | Total Estimated Cost: | 94,283 |
| Action Date | 11/12/2009 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement Location | Plumbing throughout | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

This requirement includes accessibility issues in toilet rooms, locker/shower rooms and drinking fountains. All requirements for upgrading a toilet or locker/shower room are included in this category, even if they are not plumbing (i.e. relocating stall partitions to provide 60 in. wide stall, relocating toilet paper dispenser or grab bars, etc.). Items include: replacing drinking fountains, raising/lowering toilets, installing grab bars, relocating toilet paper or towel dispensers, adding handheld shower wands, and providing 60 in. wide fully compliant toilet stalls.

Note: the actual cost to complete work in toilet rooms may be increased by a decision to do work beyond what is required for accessibility, such as re-tiling, replacing all fixtures, replacing all stall partitions, etc.

PHOTOS



Plumbing: Accessibility

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ACTION DESCRIPTION

Upgrades as needed to meet plumbing accessibility requirements.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Air and Water Quality

Asset Name: Denfeld High School
Asset Number: 215

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|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | HVAC - Dehumidification Chiller and Piping Mains | | |
| Linked System | Chilled Water Distribution | Inspection Date | 06/28/2006 |
| Prime System | Chilled Water Distribution | Finish Date | - |
| Priority | 5- Recommendations/ Improvements | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 900,458 |
| Funding Year | - | Funding Type | - |
| Requirement Location | All Floors - Entire Building | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Denfeld High School has no means of dehumidification, other than the office and boys club area. Without de-humidification capabilities, these spaces cannot meet ASHRAE 55-1992 space design conditions.

PHOTOS



HVAC - Dehumidification Chiller and Piping Mains

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ACTION DESCRIPTION

Addition of an air cooled chiller, pumps, and insulated chilled water pipe distribution system. Chiller to be screened for appearance purposes.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Air and Water Quality

Asset Name: Denfeld High School
Asset Number: 215

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|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | HVAC - Upgrade Ventilation and Replace Wood Shop Dust Collector and Upgrade Shop Hood Exhaust | | |
| Linked System | Exhaust Ventilation Systems | Inspection Date | 07/25/2006 |
| Prime System | Exhaust Ventilation Systems | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | 07/25/2009 | Total Estimated Cost: | 227,150 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Wood Shop and Metal Shop - 1926 Building North Wing | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The dust collector for the wood shop is 80 years old and is beyond it's recommended useful life. The exhaust duct is located above grade and does not serve all the required equipment. In addition, make up air is not being supplied to the wood shop as required by the 2000 International Mechanical Code.

The soldering areas in the metal shop need an upgrade of the exhaust hoods. Make up air is not being supplied as required by the International Mechanical Code.

The ventilation unit supplying these areas is not capable of providing 2000 International Mechanical Code required ventilation air. The return air is currently combining with the rest of the building supply air plenum and transferring wood dust to the common plenum.

PHOTOS



HVAC - Upgrade Ventilation and Replace Wood Shop Dust Collector and Upgrade Weld Hood Exhaust

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ACTION DESCRIPTION

Replace the wood shop dust exhaust system with a new re-circulating dust collector and pipe the exhaust duct overhead.

All Costs in USD.

Install new capture type soldering exhaust stations and install new exhaust fans.

Install a new air handling unit for the wood shop and an new air handling unit for the sheet metal area.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Air and Water Quality

Asset Name: Denfeld High School
Asset Number: 215

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|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | HVAC: Add Dehumidification in the Library and Computer Room Areas. | | |
| Linked System | Cooling Generating Systems | Inspection Date | 07/11/2006 |
| Prime System | Cooling Generating Systems | Finish Date | - |
| Priority | 5- Recommendations/ Improvements | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 153,518 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Library and Computer Rooms - 1987 Addition | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The two (2) air handling systems serving the Library and Computer Room Area have no means of dehumidification. Without dehumidification capabilities, these spaces cannot meet ASHRAE 55-1992 space design conditions.

PHOTOS



HVAC: Add Dehumidification in the Library and Computer Room Areas

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ACTION DESCRIPTION

Addition of dehumidification coils to the two air handling units and installation of closed cell liner inside the air handling units. Installation of supply duct external insulation. Upgrade Controls System. Test and Balance and Commissioning of air handling units.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Air and Water Quality

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | HVAC: Humidity Control in Orchestra Areas | | |
| Linked System | Air Distribution Systems | Inspection Date | 11/29/2006 |
| Prime System | Air Distribution Systems | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | 11/29/2007 | Total Estimated Cost: | 100,300 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Orchestra Equipment Areas | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The existing orchestra equipment areas lack humidity control. This causes instrument damage.

PHOTOS

ACTION DESCRIPTION

Provide a self contained HVAC fan coil system which will dehumidify in the summer and humidify in the winter to protect the instruments.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Air and Water Quality

Asset Name: Denfeld High School
Asset Number: 215

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|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Plumbing: Replace Galvanized Domestic Water Piping | | |
| Linked System | Domestic Water Distribution | Inspection Date | 06/28/2006 |
| Prime System | Domestic Water Distribution | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | 06/28/2007 | Total Estimated Cost: | 790,482 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Building Wide - Except for 1987 Addition | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The 80 year old domestic water distribution piping consists of galvanized piping which is connected together via lead based solder. Current flushing procedures have maintained lead levels at an acceptable level. As the piping continues to age, this may not be possible.

In addition many of the drinking fountains utilize indirect sumps for draining, some of which are located in supply air plenums. These need to be directly connected to the sanitary waste and vented per the plumbing code.

PHOTOS



Plumbing: Replace Galvanized Domestic Water Piping

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ACTION DESCRIPTION

Remove all the remaining galvanized domestic water distribution piping as well as faucets and fixtures containing lead solder. Install insulated copper piping and fixtures/faucets where required. Wall cutting and patching would be required.

This would include directly connecting the drinking fountain sumps.

This includes the bradley shower stations in the locker rooms.

All Costs in USD.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Appearance

Asset Name: Denfeld High School
Asset Number: 215

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|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Ceiling Finishes: Replace Damaged Ceiling Tile | | |
| Linked System | Ceiling Finishes | Inspection Date | 09/05/2006 |
| Prime System | Ceiling Finishes | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2009 | Total Estimated Cost: | 105,492 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Lobby 1987 Addition, North/South Corridor Adjacent to Gymnasium, Second Floor South Wing, Library | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing suspended AC tile ceiling is very nicked water damaged or cracked. Replacement required.

PHOTOS



Ceiling Finishes: Replace Damaged Ceiling Tile

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ACTION DESCRIPTION

Remove existing tiles and replace with new tile in existing grid. 23000 SQFT

District: Duluth Public Schools
Facility: Denfeld High School
Category: Appearance

Asset Name: Denfeld High School
Asset Number: 215

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|-----------------------------|---|---------------------------------------|
| Requirement Name | Exterior Windows: Replace All Blinds | |
| Linked System | Exterior Windows | Inspection Date 09/05/2006 |
| Prime System | Exterior Windows | Finish Date - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status Open |
| Inspector Name | Fern, Bob | Actual Cost 0 |
| Action Date | 09/05/2009 | Total Estimated Cost: 165,768 |
| Funding Year | - | Funding Type - |
| Requirement Location | All Classrooms Entire Building | Annual Energy/Ops Savings \$ - |
| Savings Description | - | |

REQUIREMENT DESCRIPTION

Existing window blinds are yellowed and stained.

PHOTOS



Exterior Windows: Replace All Blinds

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ACTION DESCRIPTION

Remove existing blinds and replace with new.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Appearance

Asset Name: Denfeld High School
Asset Number: 215

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|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Floor Finishes: Refinish Wood Floors | | |
| Linked System | Floor Finishes | Inspection Date | 09/05/2006 |
| Prime System | Floor Finishes | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2009 | Total Estimated Cost: | 193,850 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Entire building including stage | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing wood floors are in various degrees of condition, and show many years of wear.

PHOTOS



Floor Finishes: Refinish Wood Floors

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ACTION DESCRIPTION

Strip and sand floor as required and refinish. 37000 SQFT

District: Duluth Public Schools
Facility: Denfeld High School
Category: Appearance

Asset Name: Denfeld High School
Asset Number: 215

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|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Floor Finishes: Replace Carpet | | |
| Linked System | Floor Finishes | Inspection Date | 09/05/2006 |
| Prime System | Floor Finishes | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2009 | Total Estimated Cost: | 156,232 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Entire Building | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing carpet is worn and soiled, replacement required.

PHOTOS



Floor Finishes: Replace Carpet

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ACTION DESCRIPTION

Remove existing carpet and replace. 21300 SQFT

District: Duluth Public Schools
Facility: Denfeld High School
Category: Appearance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Site Improvements: General Landscaping | | |
| Linked System | Site Improvements | Inspection Date | 10/03/2006 |
| Prime System | Site Improvements | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Northern Lights Landscaping | Actual Cost | 0 |
| Action Date | 10/03/2007 | Total Estimated Cost: | 17,757 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Property around facility | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

There are areas around the facility (lawn, trees, shrubs and perennials) that require care to improve appearance. There are negative slope areas around the facility bringing drainage towards the facility instead of away from the facility. There are lawn areas around the immediate building requiring restoration.

PHOTOS

ACTION DESCRIPTION

Pruning, cultivating and mulching of existing trees, shrubs and perennials. Correct negative slope around foundations by installing soil and sod. Restore lawn at stressed and/or non existing lawn areas around immediate building by installing soil and sod.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Appearance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Wall Finishes: Refinish Stair Handrails | Inspection Date | 09/05/2006 |
| Linked System | Wall Finishes | Finish Date | - |
| Prime System | Wall Finishes | Status | Open |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Actual Cost | 0 |
| Inspector Name | Fern, Bob | Total Estimated Cost: | 6,844 |
| Action Date | 09/05/2009 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement Location | Main Stairs, Entire Building | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing handrail finish is worn and requires refinishing.

PHOTOS



Wall Finishes: Refinish Stair Handrails

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ACTION DESCRIPTION

Sand and prep handrails as required for new finish

District: Duluth Public Schools
Facility: Denfeld High School
Category: Appearance

Asset Name: Denfeld High School
Asset Number: 215

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|-----------------------------|-----------------------------------|-------------------------------------|------------|
| Requirement Name | Wall Finishes: Repaint Classrooms | Inspection Date | 09/05/2006 |
| Linked System | Wall Finishes | Finish Date | - |
| Prime System | Wall Finishes | Status | Open |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Actual Cost | 0 |
| Inspector Name | Fern, Bob | Total Estimated Cost: | 418,917 |
| Action Date | 09/05/2012 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement Location | All Classrooms | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Walls will require repainting due to soiling.

PHOTOS



Wall Finishes: Repaint Classrooms

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ACTION DESCRIPTION

Prep existing surfaces and repaint to district standard

District: Duluth Public Schools
Facility: Denfeld High School
Category: Asbestos

Asset Name: Denfeld High School
Asset Number: 215

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|-----------------------------|-------------------------------------|-------------------------------------|------------|
| Requirement Name | Hazardous Components: Abatement | Inspection Date | 07/01/2006 |
| Linked System | Hazardous Components Abatement | Finish Date | - |
| Prime System | Hazardous Components Abatement | Status | Open |
| Priority | 1- Currently Critical (Immediately) | Actual Cost | 0 |
| Inspector Name | Wormuth, Kevin | Total Estimated Cost: | 298,540 |
| Action Date | 07/01/2006 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement Location | Entire Facility | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

This facility was built when asbestos was a common component of many building materials. The majority of asbestos in this facility was part of the insulating materials. Most has been abated, but in some areas it is still present.

PHOTOS

ACTION DESCRIPTION

Abatement of asbestos containing materials throughtout facility.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Beyond Rated Life

Asset Name: Denfeld High School
Asset Number: 215

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|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Electrical Distribution: Outdated Panels | | |
| Linked System | Electrical Service and Distribution | Inspection Date | 09/13/2006 |
| Prime System | Electrical Service and Distribution | Finish Date | - |
| Priority | 5- Recommendations/ Improvements | Status | Open |
| Inspector Name | Crotteau, Paul | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 15,340 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Building Wide | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Several electrical panels have become outdated which make it difficult to maintain and find the correct replacement parts.

PHOTOS



Electrical Distribution: Outdated Panels

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ACTION DESCRIPTION

New panels will replace outdated panels. The new panels will be easier to find parts for and to maintain.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Beyond Rated Life

Asset Name: Denfeld High School
Asset Number: 215

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|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Floor Finishing: Replace Corridor Floor Tile | | |
| Linked System | Floor Finishes | Inspection Date | 09/05/2006 |
| Prime System | Floor Finishes | Finish Date | - |
| Priority | 5- Recommendations/ Improvements | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 289,466 |
| Funding Year | - | Funding Type | - |
| Requirement Location | All corridors throughout building | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing tile floors are original and have locations where tile is chipped away and repaired with a concrete patch, recommended replacement.

PHOTOS



Floor Finishing: Replace Corridor Floor Tile

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Floor Finishing: Replace Corridor Floor Tile

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ACTION DESCRIPTION

Remove existing tile, prep floor, replace with new tile. 17000 SQFT

District: Duluth Public Schools
Facility: Denfeld High School
Category: Beyond Rated Life

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | HVAC: Heating System Conversion - Steam to Hot Water | | |
| Linked System | Steam Distribution Systems | Inspection Date | 06/28/2006 |
| Prime System | Steam Distribution Systems | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | 06/28/2009 | Total Estimated Cost: | 985,654 |
| Funding Year | - | Funding Type | - |
| Requirement Location | All Floors - Entire Building Except for most of the 1987 Additions | Annual Energy/Ops Savings \$ | 19,892 |
| Savings Description | Energy savings generated from converting from a steam system to a how water system that includes condensing style boiler(s). | | |

REQUIREMENT DESCRIPTION

The steam system which is 80 years old has exceeded the recommended useful life. Most of the steam system is a one pipe system which is difficult to control/maintain/service. A steam system requires substantially more maintenance than a modern hot water heating system due to steam traps, condensate pumps, and chemical treatment.

PHOTOS



HVAC: Heating System Conversion - Steam to Hot Water

ACTION DESCRIPTION

Install new high efficiency hot water condensing boilers and hot water piping system. Replace all steam terminal heating devices and coils with hot water devices and coils.

Install new hot water boiler with dual fuel capabilities for curtailment mode.

Budgeted costs of \$335,800 are avoided by converting the steam system to hot water.

All Costs in USD.

This is due to the terminal steam devices requiring custom covers to be installed to eliminate the burn hazard.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Beyond Rated Life

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | HVAC: Replace Ventilation All Floors 1926 Building Auditorium, Lecture Hall, and Music Areas | | |
| Linked System | Air Distribution Systems | Inspection Date | 06/28/2006 |
| Prime System | Air Distribution Systems | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | 06/28/2009 | Total Estimated Cost: | 1,624,388 |
| Funding Year | - | Funding Type | - |
| Requirement Location | All Floors - 1926 Building Auditorium, Lecture Hall, and Music Areas in South Wing and Auditorium | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The 80 year old ventilation systems have exceeded the recommended useful life expectancy and currently poorly distributes ventilation air.

The auditorium utilizes a supply air plenum and should be ducted to new diffusers.

PHOTOS



HVAC: Replace Ventilation All Floors 1926 Building Auditorium, Lecture Hall, and Music Areas

-

ACTION DESCRIPTION

Replacement of the Existing Ventilation System with a Modern Ventilation System consisting of Air Handling Units with Energy Recovery, Duct Distribution System, and Variable Air Volume Boxes with Hot Water Reheat Coils and Hot Water Finned Tube Radiation.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Beyond Rated Life

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | HVAC: Replace Ventilation All Floors 1926 Classroom Areas | | |
| Linked System | Air Distribution Systems | Inspection Date | 06/28/2006 |
| Prime System | Air Distribution Systems | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | 06/28/2009 | Total Estimated Cost: | 3,791,694 |
| Funding Year | - | Funding Type | - |
| Requirement Location | All Floors - 1926 Building Classroom Areas Center and North Wings | Annual Energy/Ops Savings \$ | 5,257 |
| Savings Description | Energy savings will be generated by using heat exchangers to recover exhaust air energy in order to pre-condition make-up air. In addition, each classroom occupancy controls will reduce ventilation rates and control the lighting to save energy when rooms are not in use. Additional energy will be consumed to provide dehumidification during the cooling months. | | |

REQUIREMENT DESCRIPTION

The 80 year old ventilation systems have exceeded the recommended useful life expectancy and currently poorly distributes ventilation air.

There are four air handling units currently serving these areas (S-3,S-4,S-5, and S-6)

PHOTOS



HVAC: Replace Ventilation All Floors 1926 Classroom Areas

ACTION DESCRIPTION

All Costs in USD.

Replacement of the Existing Ventilation System with a Modern Ventilation System consisting of Air Handling Units with Energy Recovery, Duct Distribution System, and Variable Air Volume Boxes with Hot Water Reheat Coils and Hot Water Finned Tube Radiation.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Beyond Rated Life

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|----------------------------|---------------------------------------|------------------------------|------------|
| Requirement Name | Lighting Equipment: Occupancy Sensors | | |
| Linked System | Lighting Equipment | Inspection Date | 09/19/2006 |
| Prime System | Lighting Equipment | Finish Date | - |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Status | Open |
| Inspector Name | Ruud, Mark | Actual Cost | 0 |
| Action Date | 09/19/2012 | Total Estimated Cost: | 16,809 |
| Funding Year | - | Funding Type | - |
| Requirement | Classrooms | Annual Energy/Ops | - |
| Location | | Savings \$ | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The existing classroom occupancy sensors are single technology sensors and will need replacement in the mid term future. Dual technology sensors offer improved performance.

PHOTOS

ACTION DESCRIPTION

Remove and replace existing classroom occupancy sensors with dual technology occupancy sensors.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Beyond Rated Life

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Lighting System: Outdated Wiring | | |
| Linked System | Branch Wiring Devices | Inspection Date | 11/30/2006 |
| Prime System | Branch Wiring Devices | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Crotteau, Paul | Actual Cost | 0 |
| Action Date | 11/30/2009 | Total Estimated Cost: | 41,300 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Building Wide | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Electrical wiring for light fixtures is old and damaged throughout the school. This wiring is fragile and is not reliable.

PHOTOS

ACTION DESCRIPTION

Replace outdated wiring to light fixtures throughout the school.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Beyond Rated Life

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|----------------------------------|-------------------------------------|------------|
| Requirement Name | Plumbing - Sump Pump Replacement | | |
| Linked System | Plumbing | Inspection Date | 07/18/2006 |
| Prime System | Plumbing | Finish Date | - |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | 07/18/2012 | Total Estimated Cost: | 23,600 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Boiler Room - 1926 Building | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The sump pump in the pump room is 80 years old and beyond it's recommended service life.

In addition, the sump pumps located in Fan Room #2 have been replaced with submersible pumps which are difficult to service.

PHOTOS



Plumbing - Sump Pump Replacement

-

ACTION DESCRIPTION

Replace the existing vertical sump pumps with a new vertical duplex set of sump pumps with new duplex control panel.

This would occur in two locations.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Beyond Rated Life

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Plumbing: Replace Domestic Water Heat Exchanger | | |
| Linked System | Plumbing | Inspection Date | 07/12/2006 |
| Prime System | Plumbing | Finish Date | - |
| Priority | 5- Recommendations/ Improvements | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 35,400 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Boiler Room - 1926 Building | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Provide a hot water to hot water for domestic hot water. This will allow for an interruptible natural gas rate.

PHOTOS



Plumbing: Replace Domestic Water Heat Exchanger for Domestic Hot Water

-

ACTION DESCRIPTION

Provide a new hot water to domestic hot water heat exchanger and all required piping and controls.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Beyond Rated Life

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Plumbing: Replace Underground Sanitary Sewer Lines | | |
| Linked System | Plumbing | Inspection Date | 11/29/2006 |
| Prime System | Plumbing | Finish Date | - |
| Priority | 5- Recommendations/ Improvements | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 359,900 |
| Funding Year | - | Funding Type | - |
| Requirement Location | All Building Areas 35 Years or Older | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Underground sanitary sewer lines require replacement due to tree roots, pipe degradation, and pipe damage due to ground shifting over time.

PHOTOS

ACTION DESCRIPTION

Replace the underground sanitary sewer lines with new.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Beyond Rated Life

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Roof System: Replace Roof | Inspection Date | 08/01/2006 |
| Linked System | Roofing | Finish Date | - |
| Prime System | Roofing | Status | Open |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Actual Cost | 0 |
| Inspector Name | Inspec | Total Estimated Cost: | 244,005 |
| Action Date | 08/01/2012 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | 383 |
| Requirement Location | Center Section | | |
| Savings Description | Energy savings generated from improved roof insulation. | | |

REQUIREMENT DESCRIPTION

Roof system beyond rated service life.

PHOTOS



Roof System: Replace Roof

-

ACTION DESCRIPTION

Replace ballasted EPDM roof in Areas 6,8, and 10. Replace mod bit roof in Areas 7 and 9.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Beyond Rated Life

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Roof System: Replace Roof | Inspection Date | 08/01/2006 |
| Linked System | Roofing | Finish Date | - |
| Prime System | Roofing | Status | Open |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Actual Cost | 0 |
| Inspector Name | Inspec | Total Estimated Cost: | 165,729 |
| Action Date | 08/01/2009 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | 258 |
| Requirement Location | North Wing | | |
| Savings Description | Energy savings generated from improved roof insulation. | | |

REQUIREMENT DESCRIPTION

Roof systems beyond rated service life. Includes Areas 11-15 and 17.

PHOTOS



Roof System: Replace Roof

-

ACTION DESCRIPTION

Replace the ballasted EPDM roofs (11-15) and the adhered EPDM roof (17) in this area.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Building Code

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Elevators and Lifts: Elevator Repair | | |
| Linked System | Elevators and Lifts | Inspection Date | 08/28/2006 |
| Prime System | Elevators and Lifts | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Schindler Elevator Corp. | Actual Cost | 0 |
| Action Date | 08/28/2009 | Total Estimated Cost: | 64,251 |
| Funding Year | - | Funding Type | - |
| Requirement Location | 1987 Addition | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Work required falls into three categories: Code Compliance A17.3, Life Safety Issues and Product Upgrades.

PHOTOS

ACTION DESCRIPTION

Upgrade elevators for code compliance, life safety issues and product upgrades.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Building Code

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | HVAC: Replace Dishwasher Exhaust Hood | | |
| Linked System | Exhaust Ventilation Systems | Inspection Date | 06/28/2006 |
| Prime System | Exhaust Ventilation Systems | Finish Date | - |
| Priority | 6- Does Not Meet Current Codes/Standards | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 17,700 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Kitchen 1926 Building | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The existing dishwasher has an existing exhaust hood but is not tagged as a type II Hood. It does not have an exhaust hood as required by the 2000 International Mechanical Code. Exhausting the dishwasher steam is critical in maintaining proper indoor air quality in the kitchen.

PHOTOS



HVAC: Replace Dishwasher Exhaust Hood

-

ACTION DESCRIPTION

Demolish the existing dishwasher hood and fan system.

Add a Type II hood and dishwasher exhaust fan with the required externally insulated aluminum ductwork. Installation to comply with the 2000 International Mechanical Code.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Building Code

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | HVAC: Replace Kitchen Grease Exhaust Hood / Add Kitchen Make Up Air | | |
| Linked System | Exhaust Ventilation Systems | Inspection Date | 07/12/2006 |
| Prime System | Exhaust Ventilation Systems | Finish Date | - |
| Priority | 6- Does Not Meet Current Codes/Standards | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 153,400 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Kitchen - 1926 Addition | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The existing grease exhaust hood has been written up as a non compliant hood by the State Fire Marshall. This hood needs to be replaced with a code compliant grease exhaust hood and fan.

A hood from a convection oven also indirectly exhausts into the grease exhaust hood.

In addition, the kitchen does not have a dedicated make up air unit. Make up air for the kitchen hood is required by the 2000 International Mechanical Code.

PHOTOS



HVAC: Replace Kitchen Grease Exhaust Hood / Add Kitchen Make Up Air

-

ACTION DESCRIPTION

Replace the existing grease exhaust hood and fan and grease duct with 2000 International Mechanical Code compliant kitchen grease hood exhaust system.

Add a dedicated make up air unit with dehumidification.

All Costs in USD.

Duct would have a long way to reach the exhaust point and two hoods would need to be installed.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Building Code

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Plumbing: Replace Sanitary Sewer Mains serving the Science Areas. | | |
| Linked System | Plumbing | Inspection Date | 06/21/2006 |
| Prime System | Plumbing | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | 06/21/2007 | Total Estimated Cost: | 153,400 |
| Funding Year | FY 2006 | Funding Type | - |
| Requirement Location | Science Rooms - 1926 North Wing | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The 80 year old sanitary sewer lines serving the science rooms are not rated for chemical waste, nor is a chemical waste trap present. The sanitary waste lines have degraded to the point of impending piping failure. This condition does not meet the current Plumbing Code.

In addition, the plaster traps require replacement.

PHOTOS



Plumbing: Replace Sanitary Sewer Mains serving the Science Areas

-

ACTION DESCRIPTION

Replace the 80 year old science room sanitary waste lines with Plumbing Code approved chemical waste piping.

Install an acid waste trap.

Replace plaster traps and install new traps in spaces requiring these traps that currently do not have them.

All Costs in USD.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Capacity

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Electrical Distribution: Insufficient Capacity | | |
| Linked System | Electrical Service and Distribution | Inspection Date | 09/13/2006 |
| Prime System | Electrical Service and Distribution | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Crotteau, Paul | Actual Cost | 0 |
| Action Date | 09/13/2009 | Total Estimated Cost: | 39,648 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Building Wide | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing Branch Panels are lacking capacity for additional circuits. Panels must be added to accommodate circuits needed for additional receptacles in classrooms

PHOTOS



Electrical Distribution: Insufficient Capacity

-

ACTION DESCRIPTION

Provide four new 100 amp feeders and panels to help carry the extra load of additional receptacles throughout the building. A new distribution panel will also be required to feed new branch panels

District: Duluth Public Schools
Facility: Denfeld High School
Category: Capacity

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | HVAC: Add Cooling Capability to Computer Labs and IT Data Rooms | | |
| Linked System | Cooling Generating Systems | Inspection Date | 07/11/2006 |
| Prime System | Cooling Generating Systems | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | 07/11/2007 | Total Estimated Cost: | 401,613 |
| Funding Year | - | Funding Type | - |
| Requirement Location | IT Data Rooms - 1926 Building and 1987 Addition | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The Computer Labs and IT Data rooms get hot, which could cause technology equipment failure.

PHOTOS



HVAC: Add Cooling Capability to IT Data Rooms

-

ACTION DESCRIPTION

Provide a fan coil with a DX cooling coil and full economizer capability to utilize free cooling when outdoor conditions allow.

This would be done for all three IT rooms.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Capacity

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Wiring Devices: Insufficient Receptacles | | |
| Linked System | Branch Wiring Devices | Inspection Date | 09/13/2006 |
| Prime System | Branch Wiring Devices | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Crotteau, Paul | Actual Cost | 0 |
| Action Date | 09/13/2009 | Total Estimated Cost: | 101,008 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Building Wide | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

In general, classrooms have an insufficient number of receptacles. Computers and other electronics are plugged into power strips due to the lack of receptacles. This limits future addition of electronic devices and presents a fire hazard.

PHOTOS



Wiring Devices: Insufficient Receptacles

-

ACTION DESCRIPTION

Provide five additional 20 amp receptacle per classroom and associated branch wiring. Upgrade will first require additional branch panel boards.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Ceiling Finishes: Replace Ceiling in Cafeteria | | |
| Linked System | Ceiling Finishes | Inspection Date | 09/05/2006 |
| Prime System | Ceiling Finishes | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2009 | Total Estimated Cost: | 20,178 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Cafeteria, North Wing | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing ceiling tile is missing along North wall, other areas beginning to sag.

PHOTOS



Ceiling Finishes: Replace Ceiling in Cafeteria

-

ACTION DESCRIPTION

Install new suspended acoustical board ceiling system. 4400 SQFT

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Equipment and Furnishings: Refinish Wood Cabinets | | |
| Linked System | Equipment and Furnishings | Inspection Date | 09/05/2006 |
| Prime System | Equipment and Furnishings | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2007 | Total Estimated Cost: | 3,540 |
| Funding Year | - | Funding Type | - |
| Requirement Location | 342, 343, 347, 348, 349 | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing wood cabinets require refinishing.

PHOTOS



Equipment and Furnishings: Refinish Wood Cabinets

-

ACTION DESCRIPTION

Sand and prep cabinets as required, refinish. 270 L.F.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Equipment and Furnishings: Refurbish Cabinets and Countertops | | |
| Linked System | Equipment and Furnishings | Inspection Date | 09/05/2006 |
| Prime System | Equipment and Furnishings | Finish Date | - |
| Priority | 5- Recommendations/ Improvements | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 38,586 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Home EC Room 249 | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing metal cabites are in good shape, lime green paint is very dated as well as plastic laminate countertops.

PHOTOS



Equipment and Furnishings: Refurbish Cabinets and Countertops

-

ACTION DESCRIPTION

Prep cabinets as required and repaint, remove old plastic laminate countertops and replace with new. 220 L.F.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Equipment and Furnishings: Refurbish Hall Display Cabinets | | |
| Linked System | Equipment and Furnishings | Inspection Date | 09/05/2006 |
| Prime System | Equipment and Furnishings | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2007 | Total Estimated Cost: | 24,594 |
| Funding Year | - | Funding Type | - |
| Requirement Location | All Corridors North Wing | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing display cabinets have loos/missing glazed panels, glass ones not tempered, wood work should be refinished.

PHOTOS



Equipment and Furnishings: Refurbish Hall Display Cabinets

-

ACTION DESCRIPTION

Refinish wood cabinets, replace glazed panels with safety glazing.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Equipment and Furnishings: Replace Countertops and Project Lockers | | |
| Linked System | Equipment and Furnishings | Inspection Date | 09/05/2006 |
| Prime System | Equipment and Furnishings | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2007 | Total Estimated Cost: | 29,854 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Metal Shop 142 | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing work counters and project lockers along East wall are in very poor condition, replace.

PHOTOS



Equipment and Furnishings: Replace Countertops and Project Lockers

-

ACTION DESCRIPTION

Remove existing cabinets repair/replace flooring under cabinets, repair wall, install new cabinets. 50 Ft. Countertop, 50 Lockers

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Equipment and Furnishings: Replace Folding Acoustical Partition | | |
| Linked System | Equipment and Furnishings | Inspection Date | 09/05/2006 |
| Prime System | Equipment and Furnishings | Finish Date | - |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Status | Open |
| Inspector Name | Siddens, Lance | Actual Cost | 0 |
| Action Date | 09/05/2012 | Total Estimated Cost: | 22,007 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Rooms 213, 215 | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Folding Acoustical Partition is worn and probably inefficient for sound control.

PHOTOS



E-Equipment and Furnishings: Replace Folding Acoustical Partition

-

ACTION DESCRIPTION

Replace folding (accordian) acoustical partition with new. Approximately 400 S.F.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Equipment and Furnishings: Replace Folding Partition | | |
| Linked System | Equipment and Furnishings | Inspection Date | 09/05/2006 |
| Prime System | Equipment and Furnishings | Finish Date | - |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2012 | Total Estimated Cost: | 15,104 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Biology Room #250 | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing folding partition is worn and torn, replace with new partition.

PHOTOS



Equipment and Furnishings: Replace Folding Partition

-

ACTION DESCRIPTION

Remove existing partition and track, replace with new.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

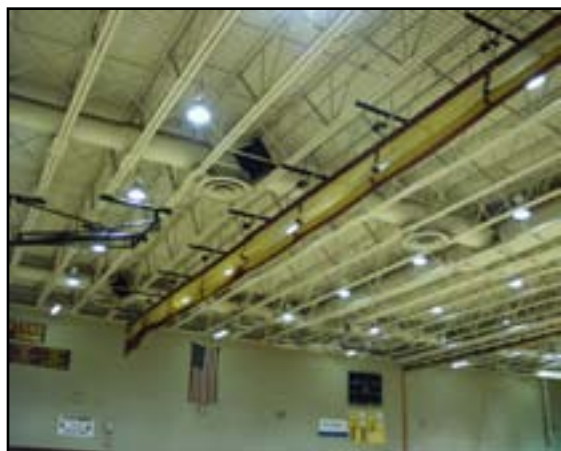
Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Equipment and Furnishings: Replace Gym Divider | | |
| Linked System | Equipment and Furnishings | Inspection Date | 09/05/2006 |
| Prime System | Equipment and Furnishings | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2007 | Total Estimated Cost: | 93,389 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Gymnasium | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

ISD 709 has reported problems with divider hardware failing thus causing curtain to lower, replace divider.

PHOTOS



Equipment and Furnishings: Replace Gym Divider

-

ACTION DESCRIPTION

Remove existing divider and replace with new. 3100 SQFT

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|----------------------------|--|------------------------------|------------|
| Requirement Name | Equipment and Furnishings: Replace Lockers | | |
| Linked System | Equipment and Furnishings | Inspection Date | 09/05/2006 |
| Prime System | Equipment and Furnishings | Finish Date | - |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Status | Open |
| Inspector Name | Siddens, Lance | Actual Cost | 0 |
| Action Date | 09/05/2012 | Total Estimated Cost: | 447,952 |
| Funding Year | - | Funding Type | - |
| Requirement | Center Section and North Section Corridor | Annual Energy/Ops | - |
| Location | Lockers Three Floors | Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Lockers are old and will need to be eventually replaced.

PHOTOS



E-Equipment and Furnishings: Replace Lockers
 -

ACTION DESCRIPTION

Replace metal lockers with new. 1200 Lockers

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Exterior Walls: Grade-Level Restoration | | |
| Linked System | Exterior Walls | Inspection Date | 08/01/2006 |
| Prime System | Exterior Walls | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Inspec | Actual Cost | 0 |
| Action Date | 08/01/2009 | Total Estimated Cost: | 979,400 |
| Funding Year | - | Funding Type | - |
| Requirement Location | North Wing | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Deteriorated grade-level walls at North Wing. Deteriorated parapet at Roof Area 17.

PHOTOS



Exterior Walls: Grade-Level Wall Restoration

-

ACTION DESCRIPTION

Rebuilding parapet, tuck pointing, spot brick replacement, joint sealant replacement, and stone repair. Sequence grade-level wall restoration with reroofing.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Exterior Walls: Grade-Level Wall Restoration | | |
| Linked System | Exterior Walls | Inspection Date | 08/01/2006 |
| Prime System | Exterior Walls | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Inspec | Actual Cost | 0 |
| Action Date | 08/01/2007 | Total Estimated Cost: | 649,000 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Auditorium | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Deteriorated grade-level walls at auditorium. Severely deteriorated parapet at Areas 4 and 5 of 2004 reroofing.

PHOTOS



Exterior Walls: Grade-Level Wall Restoration
 -

ACTION DESCRIPTION

Parapet rebuilding, tuck pointing, brick replacement, joint sealant replacement, and stone repair and replacement.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Exterior Walls: Grade-Level Wall Restoration | | |
| Linked System | Exterior Walls | Inspection Date | 08/01/2006 |
| Prime System | Exterior Walls | Finish Date | - |
| Priority | 1- Currently Critical (Immediately) | Status | Open |
| Inspector Name | Inspec | Actual Cost | 0 |
| Action Date | 08/01/2006 | Total Estimated Cost: | 5,900 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Public Schools Stadium, Ticket Booths, Concession Stand | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Deteriorated grade-level walls.

PHOTOS



Exterior Walls: Grade-Level Restoration

-

ACTION DESCRIPTION

Tuck pointing, joint sealant replacement, window replacement, siding replacement, misc. items.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|----------------------------------|-------------------------------------|------------|
| Requirement Name | Exterior Walls: Wall Restoration | | |
| Linked System | Exterior Walls | Inspection Date | 08/01/2006 |
| Prime System | Exterior Walls | Finish Date | - |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Status | Open |
| Inspector Name | Inspec | Actual Cost | 0 |
| Action Date | 08/01/2012 | Total Estimated Cost: | 873,200 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Multiple Locations | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Deteriorated grade-level walls at South Wing, Center Section and Chimney. Deteriorated roof-level and grade-level walls at 1987 Addition.

PHOTOS



Exterior Walls: Wall Restoration

-

ACTION DESCRIPTION

Tuck pointing, spot brick replacement, joint sealant replacement, stone repair, and new chimney cap.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Exterior Windows: Replace Clock Tower Windows | | |
| Linked System | Exterior Windows | Inspection Date | 09/05/2006 |
| Prime System | Exterior Windows | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2009 | Total Estimated Cost: | 178,180 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Clock Tower | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing windows leak water and are in poor condition. Replace Windows

PHOTOS



Exterior Windows: Replace Clock Tower Windows

-

ACTION DESCRIPTION

Remove existing windows and replace with new translucent, insulated fiberglass wall panel system.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Fittings: Replace Toilet Partitions | Inspection Date | 09/05/2006 |
| Linked System | Fittings | Finish Date | - |
| Prime System | Fittings | Status | Open |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Actual Cost | 0 |
| Inspector Name | Siddens, Lance | Total Estimated Cost: | 35,400 |
| Action Date | 09/05/2012 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement Location | Center section girls toilet third floor | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Metal toilet partitions are old and worn condition.

PHOTOS



Fittings: Replace Toilet Partitions

-

ACTION DESCRIPTION

Replace metal toilet partitions with plastic toilet partitions. 36 Stalls.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|----------------------------|---|-------------------------------------|------------|
| Requirement Name | Floor Finishes: Replace VCT | Inspection Date | 09/05/2006 |
| Linked System | Floor Finishes | Finish Date | - |
| Prime System | Floor Finishes | Status | Open |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Actual Cost | 0 |
| Inspector Name | Fern, Bob | Total Estimated Cost: | 71,793 |
| Action Date | 09/05/2009 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement | 138, 249, 250, 351, 352, Includes Prep | | |
| Location | Rooms/Office, 343, 346 | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing VCT is lifting at edges, cracked, or very worn.

PHOTOS



Floor Finishes: Replace VCT

-

ACTION DESCRIPTION

Remove existing VCT, Prep Floor, Replace with new.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|------------------------------|-------------------------------------|------------|
| Requirement Name | HVAC: Ductwork Cleaning | Inspection Date | 11/29/2006 |
| Linked System | Air Distribution Systems | Finish Date | - |
| Prime System | Air Distribution Systems | Status | Open |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Actual Cost | 0 |
| Inspector Name | Schumacher, Russ | Total Estimated Cost: | 76,700 |
| Action Date | 11/29/2012 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement Location | Building Wide | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Clean the duct systems that are not replaced by the indoor air quality upgrade.

PHOTOS

ACTION DESCRIPTION

Clean ductwork that is not replaced due to indoor air quality upgrades.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Interior Doors: Replace Wood Doors | | |
| Linked System | Interior Doors | Inspection Date | 09/05/2006 |
| Prime System | Interior Doors | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2009 | Total Estimated Cost: | 161,105 |
| Funding Year | - | Funding Type | - |
| Requirement Location | North Wing- All levels, Main Doors at Gymnasium, All classrooms-all levels, center section | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing wood doors are original and in poor condition, most doors drag on the floor have non-safety glazing, various patterns of glass, all with non-accessible hardware.

PHOTOS



Interior Doors: Replace Wood Doors

-



Interior Doors: Replace Wood Doors

-

ACTION DESCRIPTION

Remove existing doors, refurbish frames as required, install new doors. 123 Doors

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Roof System: Replace Roof | Inspection Date | 08/01/2006 |
| Linked System | Roofing | Finish Date | - |
| Prime System | Roofing | Status | Open |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Actual Cost | 0 |
| Inspector Name | Inspec | Total Estimated Cost: | 88,500 |
| Action Date | 08/01/2009 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement Location | North Wing and South Wing | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Replace ventilator roofs on Areas 1,3,7,9 and 12.

PHOTOS

ACTION DESCRIPTION

Replace metal roofs on ventilator shafts/ducts.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Wall Finishes: Miscellaneous Plaster Repairs | | |
| Linked System | Wall Finishes | Inspection Date | 09/05/2006 |
| Prime System | Wall Finishes | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2007 | Total Estimated Cost: | 18,408 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Throughout Building | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing plaster has formed voids behind and is falling out. Perform spot repairs.

PHOTOS



Wall Finishes: Miscellaneous Plaster Repairs

-

ACTION DESCRIPTION

Remove loose plaster and patch matching existing texture.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Wall Finishes: Miscellaneous Plaster Repairs | | |
| Linked System | Wall Finishes | Inspection Date | 09/05/2006 |
| Prime System | Wall Finishes | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2009 | Total Estimated Cost: | 18,408 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Throughout Building | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing plaster has formed voids behind and is falling out. Perform spot repairs.

PHOTOS



Wall Finishes: Miscellaneous Plaster Repairs

-

ACTION DESCRIPTION

Remove loose plaster and patch matching existing texture.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Wall Finishes: Miscellaneous Plaster Repairs | | |
| Linked System | Wall Finishes | Inspection Date | 09/05/2006 |
| Prime System | Wall Finishes | Finish Date | - |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2012 | Total Estimated Cost: | 18,408 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Throughout Building | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing plaster has formed voids behind and is falling out. Perform spot repairs.

PHOTOS



Wall Finishes: Miscellaneous Plaster Repairs

-

ACTION DESCRIPTION

Remove loose plaster and patch matching existing texture.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Deferred Maintenance

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Wall Finishes: Repair Damaged Plaster | Inspection Date | 09/05/2006 |
| Linked System | Wall Finishes | Finish Date | - |
| Prime System | Wall Finishes | Status | Open |
| Priority | 2- Potentially Critical (1-2 Yrs) | Actual Cost | 0 |
| Inspector Name | Fern, Bob | Total Estimated Cost: | 31,978 |
| Action Date | 09/05/2007 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement Location | 141, 142, Main Floor Janitors Closet- North Addition, Cafeteria, 254, 256, 340, 348, Southwest Stair Tower | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing plaster is damaged and failing from wall/ceiling.

PHOTOS



Wall Finishes: Repair Damaged Plaster

-

ACTION DESCRIPTION

Remove damaged plaster to sound material. Investigate source of problem and correct. Replace lath/backing as required, patch plaster, paint to match.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Energy and Operational Efficiency

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Controls: VendingMiser Vending Machine Controls | | |
| Linked System | Controls and Instrumentation | Inspection Date | 09/23/2006 |
| Prime System | Controls and Instrumentation | Finish Date | - |
| Priority | 1- Currently Critical (Immediately) | Status | Open |
| Inspector Name | Ruud, Mark | Actual Cost | 0 |
| Action Date | 09/23/2006 | Total Estimated Cost: | 3,304 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Vending Machines | Annual Energy/Ops Savings \$ | 305 |
| Savings Description | VeningMiser controls cycle power to the vending machine during unoccupied times to save energy. | | |

REQUIREMENT DESCRIPTION

Install VendingMiser controls on vending machines.

PHOTOS

ACTION DESCRIPTION

-

District: Duluth Public Schools
Facility: Denfeld High School
Category: Energy and Operational Efficiency

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | HVAC: Steam System Steam Trap Upgrades | | |
| Linked System | Steam Distribution Systems | Inspection Date | 09/07/2006 |
| Prime System | Steam Distribution Systems | Finish Date | - |
| Priority | 1- Currently Critical (Immediately) | Status | Open |
| Inspector Name | Ruud, Mark | Actual Cost | 0 |
| Action Date | 09/07/2006 | Total Estimated Cost: | 48,775 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Facility Wide | Annual Energy/Ops Savings \$ | 5,294 |
| Savings Description | Heating savings attributed to leaking steam traps that result in the overheating of tunnel areas or steam venting in condensate receiver tanks. | | |

REQUIREMENT DESCRIPTION

- 1) Complete survey all steam traps system wide to locate failed traps.
- 2) Replace or repair of failed traps depending on trap age, condition, and availability of replacement part kits.

PHOTOS

ACTION DESCRIPTION

-

District: Duluth Public Schools
Facility: Denfeld High School
Category: Energy and Operational Efficiency

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Lighting: Lighting Retrofit | Inspection Date | 09/20/2006 |
| Linked System | Lighting Equipment | Finish Date | - |
| Prime System | Lighting Equipment | Status | Open |
| Priority | 1- Currently Critical (Immediately) | Actual Cost | 0 |
| Inspector Name | Ruud, Mark | Total Estimated Cost: | 77,210 |
| Action Date | 09/20/2006 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | 6,902 |
| Requirement Location | Entire Facility | | |
| Savings Description | Energy savings generated through more efficient lighting technology. | | |

REQUIREMENT DESCRIPTION

Lighting project consists of the following:

- 1) Retrofit/Replace 34w T12 fixtures with 25w T8 lighting
- 2) Relamp 32w T8 lamps with 25w T8 lamps
- 3) Replace HID lighting with T8 lighting fixtures
- 4) Replace Incand. lighting with Fluorescent
- 5) Upgrade exit signs with LED technology
- 6) Gym Occupancy Sensors

PHOTOS

ACTION DESCRIPTION

-

District: Duluth Public Schools
Facility: Denfeld High School
Category: Energy and Operational Efficiency

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Plumbing - Addition of Natural Gas Water Heater | | |
| Linked System | Plumbing | Inspection Date | 07/17/2006 |
| Prime System | Plumbing | Finish Date | - |
| Priority | 5- Recommendations/ Improvements | Status | Open |
| Inspector Name | Schumacher, Russ | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 29,500 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Boiler Room | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The domestic hot water is currently generated by a steam to hot water heat exchanger. A natural gas water heater is desired for summer operation.

PHOTOS



Plumbing - Addition of Natural Gas Water Heater

-

ACTION DESCRIPTION

Add Natural Gas Water Heater for summer operation.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Energy and Operational Efficiency

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Plumbing: Water Conservation Upgrades | | |
| Linked System | Plumbing Fixtures | Inspection Date | 09/21/2006 |
| Prime System | Plumbing Fixtures | Finish Date | - |
| Priority | 1- Currently Critical (Immediately) | Status | Open |
| Inspector Name | Ruud, Mark | Actual Cost | 0 |
| Action Date | 09/21/2006 | Total Estimated Cost: | 64,922 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Entire Facility | Annual Energy/Ops Savings \$ | 3,263 |
| Savings Description | Reduce water and sewer usage using new low flow devices. | | |

REQUIREMENT DESCRIPTION

Replace / Retrofit standard flow flush valves and faucets with low flow devices.

PHOTOS

ACTION DESCRIPTION

-

District: Duluth Public Schools
Facility: Denfeld High School
Category: Life Safety

Asset Name: Denfeld High School
Asset Number: 215

| | | |
|-----------------------------|-------------------------------------|---------------------------------------|
| Requirement Name | Exterior Walls: Wall Restoration | |
| Linked System | Exterior Walls | Inspection Date 08/01/2006 |
| Prime System | Exterior Walls | Finish Date - |
| Priority | 1- Currently Critical (Immediately) | Status Open |
| Inspector Name | Inspec | Actual Cost 0 |
| Action Date | 08/01/2006 | Total Estimated Cost: 11,800 |
| Funding Year | - | Funding Type - |
| Requirement Location | Upper corner of wall | Annual Energy/Ops Savings \$ - |
| Savings Description | - | |

REQUIREMENT DESCRIPTION

Severely deteriorated upper corner adjacent "helmet" of south wing.

PHOTOS



Exterior Walls: Wall Restoration

-

ACTION DESCRIPTION

Restore upper corner of wall. Rebuilding, brick replacement, and tuck pointing.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Life Safety

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---------------------------------------|-------------------------------------|------------|
| Requirement Name | Lighting Equipment: Exterior Lighting | Inspection Date | 09/19/2006 |
| Linked System | Lighting Equipment | Finish Date | - |
| Prime System | Lighting Equipment | Status | Open |
| Priority | 1- Currently Critical (Immediately) | Actual Cost | 0 |
| Inspector Name | Ruud, Mark | Total Estimated Cost: | 34,482 |
| Action Date | 09/19/2006 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement Location | Exterior | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The existing exterior lighting for this facility is getting old and the light levels and coverage for adequate safety is a concern.

PHOTOS

ACTION DESCRIPTION

Replace and add exterior fixtures as needed to improve light levels and coverage.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Life Safety

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Superstructure: Construct Second Floor Exit From Classrooms | | |
| Linked System | Superstructure | Inspection Date | 09/05/2006 |
| Prime System | Superstructure | Finish Date | - |
| Priority | 1- Currently Critical (Immediately) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2006 | Total Estimated Cost: | 78,588 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Wood Shop #256, Science Room #351 | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

These two rooms have been cited by the Fire Marshal as requiring second exits.

PHOTOS

ACTION DESCRIPTION

Construct second exit corridor in adjacent classrooms.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Occupant Security

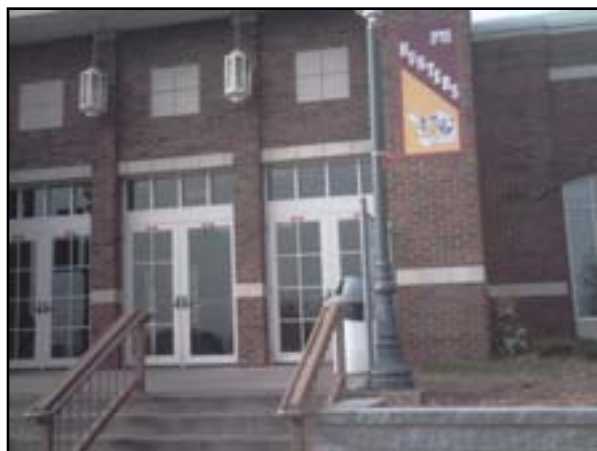
Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Communication and Security: Access Control | | |
| Linked System | Communications and Security | Inspection Date | 09/19/2006 |
| Prime System | Security and Detection Systems | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Crotteau, Paul | Actual Cost | 0 |
| Action Date | 09/19/2009 | Total Estimated Cost: | 23,600 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Building Wide | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Doors need ability to be locked down with access allowed only to authorized people. Also doors without card readers should be monitored for unauthorized access.

PHOTOS



Communication and Security: Access Control

-

ACTION DESCRIPTION

Install 6 proximity card readers at main entry doors for both public and personal
 And add magnetic door contacts to all other exterior doors on a alarm system.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Occupant Security

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Fire Alarm Systems: Outdated System | | |
| Linked System | Fire Alarm Systems | Inspection Date | 09/19/2006 |
| Prime System | Fire Alarm Systems | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Crotteau, Paul | Actual Cost | 0 |
| Action Date | 09/19/2009 | Total Estimated Cost: | 152,928 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Building Wide | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Fire alarm systems are old analog system. System is prone to malfunctions and is very hard to identify exact area of alarm. It is also difficult to troubleshoot and find malfunctions.

PHOTOS



Fire Alarm Systems: Outdated System

-

ACTION DESCRIPTION

Replace fire system with a fully addressable fire system. This will allow for quick response to exact alarm device and allow for better maintenance and safety

District: Duluth Public Schools
Facility: Denfeld High School
Category: Upgrades

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Ceiling Finishes: Replace 12x12 Acoustical Tile | | |
| Linked System | Ceiling Finishes | Inspection Date | 09/05/2006 |
| Prime System | Ceiling Finishes | Finish Date | - |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Status | Open |
| Inspector Name | Siddens, Lance | Actual Cost | 0 |
| Action Date | 09/05/2012 | Total Estimated Cost: | 5,281 |
| Funding Year | - | Funding Type | - |
| Requirement Location | South Wing Corridor, Center section boys/girls toilets | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

12x12 adhesive applied acoustical tile is aged and inefficient and does not meet district standardization goal to convert to 2x2 suspended acoustical tile.

PHOTOS



Ceiling Finishes: Replace 12x12 Acoustical Tile

-

ACTION DESCRIPTION

Replace 12x12 adhesive applied acoustical tile with 2x2 suspended acoustical tile. approximately 1150 S.F.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Upgrades

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Ceiling Finishes: Replace 2x4 Acoustical Tile | | |
| Linked System | Ceiling Finishes | Inspection Date | 09/05/2006 |
| Prime System | Ceiling Finishes | Finish Date | - |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Status | Open |
| Inspector Name | Siddens, Lance | Actual Cost | 0 |
| Action Date | 09/05/2012 | Total Estimated Cost: | 141,600 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Center Section Rooms: 113, 114, 115, 116, Rooms Adjacent to 122, 124, 126, 213, 215, 216, 217, 218, 220, 222, 229, 230, 231, 232, 234, 311, 313, 314, 315, 316, 317, 318, 319, 320, 325, 326, 327, 328, 329, 330 | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

District future standardization goal is to convert to 2x2 suspended acoustical tile ceilings.

PHOTOS



Ceiling Finishes: Replace 2x4 Acoustical Tile

-

ACTION DESCRIPTION

Replace 2x4 suspended acoustical tile ceilings with 2x2 suspended acoustical tile. Approximately 24,000 S.F.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Upgrades

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Communication and Security: Cabling Upgrade | | |
| Linked System | Communications and Security | Inspection Date | 08/15/2006 |
| Prime System | Local Area Networks | Finish Date | - |
| Priority | 5- Recommendations/ Improvements | Status | Open |
| Inspector Name | The Westlund Group | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 279,070 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Entire Facility | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing building cabling has been installed in several stages over the years and contains different categories of cabling.

PHOTOS



Communication and Security: Cabling Upgrade

-

ACTION DESCRIPTION

Replace old and mixed telephone/data cabling with up to date category 6 or 6A. Add basic wireless coverage. Add high bandwidth Fiber Optic Cabling between wiring closets. Standardize quantity of phone and data in classroom and offices.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Upgrades

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Communication and Security: Clock System | | |
| Linked System | Communications and Security | Inspection Date | 09/19/2006 |
| Prime System | Clock and Program Systems | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Crotteau, Paul | Actual Cost | 0 |
| Action Date | 09/19/2009 | Total Estimated Cost: | 53,100 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Building Wide | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Master clock systems no longer keep clocks in time. Most are only used for running the bells. Atomic clocks may not receive a signal through the brick buildings. Many clocks do not work at all.

PHOTOS



Communications and Security: Clock System

-

ACTION DESCRIPTION

Install new wireless master clock system. The main clock receives the GPS signal for exact time and then sends signal to other clocks in facility. This will allow for accurate time and less tardiness between classes.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Upgrades

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Communication and Security: Public Address and Sound System | | |
| Linked System | Communications and Security | Inspection Date | 09/19/2006 |
| Prime System | Intercommunication and Paging System | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Crotteau, Paul | Actual Cost | 0 |
| Action Date | 09/19/2009 | Total Estimated Cost: | 12,980 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Building Wide | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The paging is done over the telephone system only. There are no speakers in the hallways or commons area.

PHOTOS



Communication and Security: Public Address and Sound System

ACTION DESCRIPTION

Install additional speakers as required

District: Duluth Public Schools
Facility: Denfeld High School
Category: Upgrades

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Communication and Security: Video/TV Distribution Upgrade | | |
| Linked System | Communications and Security | Inspection Date | 08/15/2006 |
| Prime System | Television Systems | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | The Westlund Group | Actual Cost | 0 |
| Action Date | 08/15/2009 | Total Estimated Cost: | 71,390 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Entire Facility | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Analog Broadcast TV Signals are required by the FCC to be turned off in the Spring of 2009.

PHOTOS

ACTION DESCRIPTION

Install new TV Distribution System capable of digital signals in all classrooms and administrative areas as required.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Upgrades

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Communications and Security: Sound Systems, Auditorium Control Booth Upgrades | | |
| Linked System | Communications and Security | Inspection Date | 08/15/2006 |
| Prime System | Classroom Sound Systems | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | The Westlund Group | Actual Cost | 0 |
| Action Date | 08/15/2007 | Total Estimated Cost: | 441,320 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Entire Facility | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

There are little or no audio enhancement systems in the classrooms.

Gymnasium sound system is inadequate and not usable. The Auditorium control booth components (sound, video/projection, etc.) are in need of upgrade.

PHOTOS

ACTION DESCRIPTION

Add audio enhancement systems to Classrooms.

Replace Gymnasium sound system.

Upgrade Auditorium control booth components.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Upgrades

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Controls and Instrumentation: BAS and Controls Upgrade | | |
| Linked System | Controls and Instrumentation | Inspection Date | 08/16/2006 |
| Prime System | Building Automation Systems | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Schmidt, Brian | Actual Cost | 0 |
| Action Date | 08/16/2007 | Total Estimated Cost: | 265,500 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Serves entire building | Annual Energy/Ops Savings \$ | 9,531 |
| Savings Description | Energy saving through optimization and repairs of existing control system. | | |

REQUIREMENT DESCRIPTION

Upgrade existing, outdated BAS to new Web-based BAS and tie to new District-wide BAS network. This will allow for central monitoring and control of all buildings from the Facilities Management building.

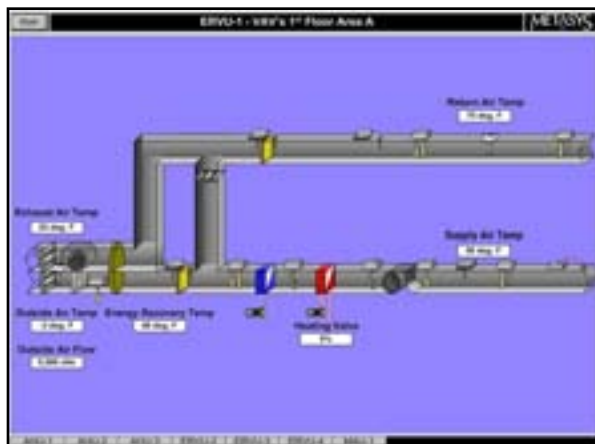
Upgrade existing pneumatic controls (old technology) to new Direct Digital controls.

Upgrade/replace existing temperature control valves, dampers, and actuators. The majority are beyond rated life and many are disconnected and not functioning, thus not operating as energy efficiently as possible.

Replace existing temperature control air compressor and air dryer with new and repair control air line leaks. This will improve the energy efficiency of the existing control system.

The existing controls shall be recommissioned to verify proper sequence of operation and optimize energy efficiency. Additional control and monitoring points shall also be added to the BAS system to optimize HVAC system performance.

PHOTOS



Controls and Instrumentation: BAS and Controls Upgrade

ACTION DESCRIPTION

Upgrade existing BAS to new web based to tie to District-wide BAS network. Add additional monitoring and control points to optimize BAS system.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Upgrades

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Emergency Power Distribution: Generator Backup | | |
| Linked System | Emergency Light and Power Systems | Inspection Date | 09/19/2006 |
| Prime System | Emergency Light and Power Systems | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Crotteau, Paul | Actual Cost | 0 |
| Action Date | 09/19/2007 | Total Estimated Cost: | 190,570 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Exterior near Electrical Room | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

School currently has no backup power system to be used during a power failure. To keep students in school during power outage, sufficient lighting must be maintained along with necessary life safety systems.

PHOTOS



Emergency Power Distribution: Generator Backup

-

ACTION DESCRIPTION

Install transfer switch and generator to feed distribution system during a power outage. Generator will be sized to handle the full building demand.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Upgrades

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Equipment and Furnishings: Construct New Computer Stations | | |
| Linked System | Equipment and Furnishings | Inspection Date | 09/05/2006 |
| Prime System | Equipment and Furnishings | Finish Date | - |
| Priority | 5- Recommendations/ Improvements | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 111,333 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Center Section Rooms: 114, 131, Library, 141, 341 | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing computer stations do not meet districts guture goal to standardize computer stations.

PHOTOS



E-Equipment and Furnishings: Construct New Computer Stations

-

ACTION DESCRIPTION

Replace existing computer stations with new standardized type. Approximately 85 computer stations.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Upgrades

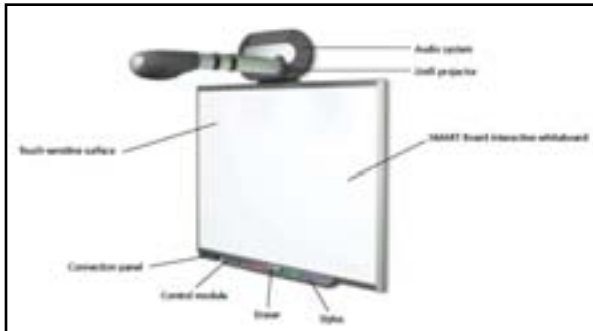
Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Equipment and Furnishings: Visual Systems (Smart Boards) | | |
| Linked System | Equipment and Furnishings | Inspection Date | 08/15/2006 |
| Prime System | Audio-visual Equipment | Finish Date | - |
| Priority | 5- Recommendations/ Improvements | Status | Open |
| Inspector Name | The Westlund Group | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 947,540 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Entire Facility | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Site has two projectors and three Smart Boards installed. Three Smart Boards are on order.

PHOTOS



Equipment and Furnishings: Visual Systems (Smart Boards)

ACTION DESCRIPTION

Install additional Smart Boards.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Upgrades

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Fittings: Replace Chalkboards and Tackboards | | |
| Linked System | Fittings | Inspection Date | 09/05/2006 |
| Prime System | Fittings | Finish Date | - |
| Priority | 5- Recommendations/ Improvements | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 71,508 |
| Funding Year | - | Funding Type | - |
| Requirement Location | All Classrooms Entire Building | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing chalkboards and tackboards should be replaced to bring up to modern standards.

PHOTOS



Fittings: Replace Chalkboards and Tackboards

-

ACTION DESCRIPTION

Remove/Replace/Resurface existing chalkboards as required. 3900 SQFT

District: Duluth Public Schools
Facility: Denfeld High School
Category: Upgrades

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|------------------------------------|-------------------------------------|------------|
| Requirement Name | Lighting Equipment: Dimming System | | |
| Linked System | Lighting Equipment | Inspection Date | 09/19/2006 |
| Prime System | Lighting Equipment | Finish Date | - |
| Priority | 5- Recommendations/ Improvements | Status | Open |
| Inspector Name | Crotteau, Paul | Actual Cost | 0 |
| Action Date | - | Total Estimated Cost: | 118,000 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Stage Area | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Dimming system could be improved with newer system and better technology.

PHOTOS



Lighting Equipment: Dimming System

-

ACTION DESCRIPTION

Replace dimming system with newer system for better stage lighting and control.

District: Duluth Public Schools
Facility: Denfeld High School
Category: Upgrades

Asset Name: Denfeld High School
Asset Number: 215

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Superstructure: Renovate Ceramics Classroom | | |
| Linked System | Superstructure | Inspection Date | 09/05/2006 |
| Prime System | Superstructure | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 09/05/2009 | Total Estimated Cost: | 42,598 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Ceramics Classroom #140 | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Existing classroom is in poor condition, cabinets require replacement, ceiling has been pulled off, mezzanine railing is non-code compliant.

PHOTOS



Superstructure: Renovate Ceramics Classroom

-

ACTION DESCRIPTION

Renovate entire room with new cabinets, ceiling, and modify railing for code compliance.

District: Duluth Public Schools

Asset Name: Public School Stadium / Press Booth

Facility: Denfeld High School

Asset Number: 215e

Category: Appearance

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Ceiling Finishes: Paint Surfaces | | |
| Linked System | Ceiling Finishes | Inspection Date | 10/04/2006 |
| Prime System | Ceiling Finishes | Finish Date | - |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Status | Open |
| Inspector Name | Siddens, Lance | Actual Cost | 0 |
| Action Date | 10/04/2012 | Total Estimated Cost: | 9,824 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Stadium Building, Concessions Building, Athletic Storage Building, Ticket Booths | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

General interior painting will be required within or around 10 years of ceiling surfaces and ductwork as routine maintenance.

PHOTOS



Ceiling Finishes: Paint Surfaces

-

ACTION DESCRIPTION

Paint ceiling surfaces and exposed ductwork, approximately 6000 S.F.

District: Duluth Public Schools

Asset Name: Public School Stadium / Press Booth

Facility: Denfeld High School

Asset Number: 215e

Category: Appearance

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Wall Finishes: Grout | Inspection Date | 10/04/2006 |
| Linked System | Wall Finishes | Finish Date | - |
| Prime System | Wall Finishes | Status | Open |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Actual Cost | 0 |
| Inspector Name | Siddens, Lance | Total Estimated Cost: | 2,714 |
| Action Date | 10/04/2009 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement Location | Stadium Building Rooms 100, 104, 106, 109, 111, 112 | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Juncture between top of partition and metal deck ceiling has areas of incomplete and cracked grout infill.

PHOTOS



Wall Finishes: Grout

-

ACTION DESCRIPTION

Replace and/or repair grout at partition top to metal deck ceilings.

District: Duluth Public Schools

Asset Name: Public School Stadium / Press Booth

Facility: Denfeld High School

Asset Number: 215e

Category: Appearance

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Wall Finishes: Paint Interior | Inspection Date | 10/04/2006 |
| Linked System | Wall Finishes | Finish Date | - |
| Prime System | Wall Finishes | Status | Open |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Actual Cost | 0 |
| Inspector Name | Siddens, Lance | Total Estimated Cost: | 20,414 |
| Action Date | 10/04/2012 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement Location | Stadium Building, Concession Building, Athletic Storage Building, Ticket Booths | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

General interior painting will be required within or around 10 years of wall surfaces as routine maintenance.

PHOTOS



Wall Finishes: Paint Interior

-

ACTION DESCRIPTION

Paint wall surfaces. Approximately 26000 S.F.

District: Duluth Public Schools

Asset Name: Public School Stadium / Press Booth

Facility: Denfeld High School

Asset Number: 215e

Category: Deferred Maintenance

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Exterior Walls: Repair Cracks in Masonry Walls | | |
| Linked System | Exterior Walls | Inspection Date | 10/04/2006 |
| Prime System | Exterior Walls | Finish Date | - |
| Priority | 2- Potentially Critical (1-2 Yrs) | Status | Open |
| Inspector Name | Fern, Bob | Actual Cost | 0 |
| Action Date | 10/04/2007 | Total Estimated Cost: | 3,929 |
| Funding Year | - | Funding Type | - |
| Requirement Location | North Locker Room Building | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Exterior masonry walls have settlement cracks and need to be caulked and tuckpointed.

PHOTOS



Exterior Walls: Repair Cracks in Masonry Walls

-



Exterior Walls: Repair Cracks in Masonry Walls

-

ACTION DESCRIPTION

Tuckpoint and caulk cracks.

District: Duluth Public Schools

Asset Name: Public School Stadium / Press Booth

Facility: Denfeld High School

Asset Number: 215e

Category: Occupant Security

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Fire Alarm Systems: Extend System | | |
| Linked System | Fire Alarm Systems | Inspection Date | 11/30/2006 |
| Prime System | Fire Alarm Systems | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Crotteau, Paul | Actual Cost | 0 |
| Action Date | 11/30/2009 | Total Estimated Cost: | 5,900 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Building Wide | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Currently there is no fire alarm system in the Public Schools Stadium portion of Denfeld. Complete fire alarm system is needed for occupant safety.

PHOTOS

ACTION DESCRIPTION

Extend fully addressable fire system into Public Schools Stadium. This will allow for quick response to exact alarm device and allow for better maintenance and safety.

District: Duluth Public Schools

Asset Name: Public School Stadium / Press Booth

Facility: Denfeld High School

Asset Number: 215e

Category: Upgrades

| | | | |
|-----------------------------|--|-------------------------------------|------------|
| Requirement Name | Communication and Security: Access Control | | |
| Linked System | Communications and Security | Inspection Date | 11/30/2006 |
| Prime System | Security and Detection Systems | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Crotteau, Paul | Actual Cost | 0 |
| Action Date | 11/30/2009 | Total Estimated Cost: | 5,900 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Building Wide | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

Doors need ability to be locked down with access allowed only to authorized people. Also doors without card readers should be monitored for unauthorized access.

PHOTOS

ACTION DESCRIPTION

Install proximity card readers at main entry doors for both public and personal and add magnetic door contacts to all other exterior doors on an alarm system.

District: Duluth Public Schools

Asset Name: Public School Stadium / Press Booth

Facility: Denfeld High School

Asset Number: 215e

Category: Upgrades

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | Communication and Security: Public Address and Sound System | | |
| Linked System | Communications and Security | Inspection Date | 11/30/2006 |
| Prime System | Communications and Security | Finish Date | - |
| Priority | 3- Necessary - Not Yet Critical (3-5 Yrs) | Status | Open |
| Inspector Name | Crotteau, Paul | Actual Cost | 0 |
| Action Date | 11/30/2009 | Total Estimated Cost: | 3,422 |
| Funding Year | - | Funding Type | - |
| Requirement Location | Building Wide | Annual Energy/Ops Savings \$ | - |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

There is currently no paging system installed. A paging system may be needed for security reason.

PHOTOS

ACTION DESCRIPTION

Install new paging system and amplifier and install speakers where needed.

District: Duluth Public Schools

Asset Name: Public School Stadium / Press Booth

Facility: Denfeld High School

Asset Number: 215e

Category: Upgrades

| | | | |
|-----------------------------|---|-------------------------------------|------------|
| Requirement Name | HVAC - Heating Improvements | Inspection Date | 08/20/2006 |
| Linked System | Heat Generating Systems | Finish Date | - |
| Prime System | Heat Generating Systems | Status | Open |
| Priority | 4- Mid Term Needs (6-10 Yrs) | Actual Cost | 0 |
| Inspector Name | Schumacher, Russ | Total Estimated Cost: | 41,300 |
| Action Date | 08/20/2012 | Funding Type | - |
| Funding Year | - | Annual Energy/Ops Savings \$ | - |
| Requirement Location | Public Stadium Locker Rooms and Referee's Rooms | | |
| Savings Description | - | | |

REQUIREMENT DESCRIPTION

The fan coils that serve the locker and toilet rooms are located outside. These units do not have the heating coil capability to heat the spaces in the winter.

In addition the ductwork paint is peeling.

The referee's dressing areas are cold in the winter.

The exhaust for the boiler generates ice, causing a walking hazard.

PHOTOS



Fan coils

-

ACTION DESCRIPTION

Upsize and relocate the fan coils and associated ductwork to inside the locker/toilet rooms.

Add larger unit heaters for referee's dressing areas.

All Costs in USD.

Switch locations of boiler intake and exhaust.