

Requirement Detail

by Asset Name and Category

**FACILITIES MANAGEMENT
BUILDING**

District: Duluth Public Schools
Facility: Facilities Management
Category: Deferred Maintenance

Asset Name: Facilities Management - Parking
Asset Number: 15a

Requirement Name	Vehicular Paving: Asphalt Drive/Parking		
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:	7,080
Funding Year	-	Funding Type	-
Requirement Location	Pavement between Fac. Mgmt and Maintenance Shopt	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Asphalt pavement between Facility Management Building and Maintenance Shops badly damaged.

PHOTOS

ACTION DESCRIPTION

Repair badly damaged asphalt pavement area.

District: Duluth Public Schools
Facility: Facilities Management
Category: Deferred Maintenance

Asset Name: Facilities Management - Parking
Asset Number: 15a

Requirement Name	Vehicular Paving: Asphalt Drive/Parking		
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	Asphalt Drive/Parking	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Pavement will need overlay in 3-5 years.

PHOTOS

ACTION DESCRIPTION

Overlay asphalt drive/parking between Facilities Management Building and Maintenance Shops.

District: Duluth Public Schools
Facility: Facilities Management
Category: Deferred Maintenance

Asset Name: Facilities Management - Parking
Asset Number: 15a

Requirement Name	Vehicular Paving: Storage Bldg and Alley Parking		
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:	11,800
Funding Year	-	Funding Type	-
Requirement Location	Storage Building and Alley Parking	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Entrance to storage building parking lot and adjacent off-alley parking are in very poor condition.

PHOTOS

ACTION DESCRIPTION

Reconstruct entrance to Storage Building parking lot and also adjacent off-alley parking.

District: Duluth Public Schools
Facility: Facilities Management
Category: Deferred Maintenance

Asset Name: Facilities Management - Parking
Asset Number: 15a

Requirement Name	Vehicular Paving: Storage Building 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:	5,900
Funding Year	-	Funding Type	-
Requirement Location	Storage Building Lot	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Storage building parking lot will need overlay in 6-10 years.

PHOTOS

ACTION DESCRIPTION

Overlay storage building parking lot.

District: Duluth Public Schools
Facility: Facilities Management
Category: Life Safety

Asset Name: Facilities Management - Sidewalks
Asset Number: 15b

Requirement Name	Pedestrian Paving: Concrete Entrance/Sidewalks		
Linked System	Pedestrian Paving	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:	35,400
Funding Year	-	Funding Type	-
Requirement Location	South and West sides of Building	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Concrete entrance pads and sidewalk area on south and west sides of building in poor condition.

PHOTOS

ACTION DESCRIPTION

Replace concrete entrance pads and sidewalk on south and west side of building.

District: Duluth Public Schools
Facility: Facilities Management
Category: Air and Water Quality

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	HVAC - Replace Wood Shop Dust Collector and Upgrade Weld 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:	118,000
Funding Year	-	Funding Type	-
Requirement Location	Pipe and Carpenter Shops	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

The dust collector for the wood shop 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 welding 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 weld exhaust hoods to an insufficient job of exhausting weld fumes.

PHOTOS



HVAC - 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.

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

All Costs in USD.

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: Facilities Management
Category: Air and Water Quality

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	HVAC: Upgrade Office Ventilation and Add Dehumidification		
Linked System	Air Distribution Systems	Inspection Date	07/11/2006
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	07/11/2009	Total Estimated Cost:	77,762
Funding Year	-	Funding Type	-
Requirement Location	Office and Storage Rooms	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

The air handling system serving the office has exceeded it's recommended service life and has no means of dehumidification due to failed components in the undersized non operational rooftop unit. Without dehumidification capabilities, these spaces cannot meet ASHRAE 55-1992 space design conditions.

In addition the storage room does not have means of ventilation nor heating.

PHOTOS



HVAC: Upgrade Office Ventilation and Add Dehumidification

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ACTION DESCRIPTION

Installation of new air handling unit with dehumidification capabilities (DX Coil and Condensing Unit). Installation of supply duct with external insulation. Upgrade Controls System. Test and Balance and Commissioning of air handling units.

Installation of unit heaters in storage area and ventilation via the office unit.

This unit would serve the locker rooms as well.

All Costs in USD.

District: Duluth Public Schools
Facility: Facilities Management
Category: Air and Water Quality

Asset Name: Facilities Management
Asset Number: 15

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:	69,384
Funding Year	-	Funding Type	-
Requirement Location	Building Wide	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

The domestic water distribution piping consists of galvanized piping, some of which is 117 years old, 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.

PHOTOS



Plumbing: Replace Galvanized Domestic Water Piping

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: Facilities Management
Category: Asbestos

Asset Name: Facilities Management
Asset Number: 15

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:	11,942
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. Some 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: Facilities Management
Category: Beyond Rated Life

Asset Name: Facilities Management
Asset Number: 15

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:	266,444
Funding Year	-	Funding Type	-
Requirement Location	All Floors - Entire Building	Annual Energy/Ops Savings \$	2,472
Savings Description	Energy savings generated from converting from a steam system with old boilers to a hot water system that includes condensing style boiler(s).		

REQUIREMENT DESCRIPTION

The steam system which is 117 years old has exceeded the recommended useful life. 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.

All Costs in USD.

District: Duluth Public Schools
Facility: Facilities Management
Category: Beyond Rated Life

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	HVAC: Heating System Upgrade - Garages		
Linked System	Heat Generating Systems	Inspection Date	06/28/2006
Prime System	Heat Generating Systems	Finish Date	-
Priority	4- Mid Term Needs (6-10 Yrs)	Status	Open
Inspector Name	Schumacher, Russ	Actual Cost	0
Action Date	06/28/2012	Total Estimated Cost:	53,100
Funding Year	-	Funding Type	-
Requirement Location	Garages	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

The steam unit heaters in the garages are undersized and the spaces get cold.

PHOTOS



HVAC: Heating System Upgrade - Garages

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ACTION DESCRIPTION

Install new high natural gas infrared heat piping to provide improved heating capabilities.

District: Duluth Public Schools
Facility: Facilities Management
Category: Beyond Rated Life

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	Plumbing - Sand Separator Replacement		
Linked System	Plumbing	Inspection Date	07/18/2006
Prime System	Plumbing	Finish Date	-
Priority	1- Currently Critical (Immediately)	Status	Open
Inspector Name	Schumacher, Russ	Actual Cost	0
Action Date	07/18/2006	Total Estimated Cost:	17,700
Funding Year	-	Funding Type	-
Requirement Location	Boiler Room	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

The existing sand separator is failing and in need of replacement.

PHOTOS



Plumbing - Sand Separator Replacement

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ACTION DESCRIPTION

Replace the existing sand separator with a below ground code compliant system.

District: Duluth Public Schools
Facility: Facilities Management
Category: Beyond Rated Life

Asset Name: Facilities Management
Asset Number: 15

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:	41,300
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: Facilities Management
Category: Beyond Rated Life

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	Roof System: Replace Roof	Inspection Date	08/01/2006
Linked System	Roofing	Finish Date	-
Prime System	Roofing	Status	Open
Priority	2- Potentially Critical (1-2 Yrs)	Actual Cost	0
Inspector Name	Inspec	Total Estimated Cost:	45,921
Action Date	08/01/2007	Funding Type	-
Funding Year	-	Annual Energy/Ops Savings \$	73
Requirement Location	Garage		
Savings Description	Energy savings generated from improved roof insulation.		

REQUIREMENT DESCRIPTION

Roof system beyond rated service life. Includes roof Area 2.

PHOTOS

ACTION DESCRIPTION

Replace the built-up roof in this area. Sequence work with roof-level wall restoration.

District: Duluth Public Schools
Facility: Facilities Management
Category: Beyond Rated Life

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	Roof System: Replace Roof	Inspection Date	08/01/2006
Linked System	Roofing	Finish Date	-
Prime System	Roofing	Status	Open
Priority	2- Potentially Critical (1-2 Yrs)	Actual Cost	0
Inspector Name	Inspec	Total Estimated Cost:	26,210
Action Date	08/01/2007	Funding Type	-
Funding Year	-	Annual Energy/Ops Savings \$	42
Requirement Location	Shop		
Savings Description	Energy savings generated from improved roof insulation.		

REQUIREMENT DESCRIPTION

Roof system beyond rated service life and in poor condition. Includes roof Area 3.

PHOTOS



Roof System: Replace Roof

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ACTION DESCRIPTION

Replace the built-up roof in this area. Sequence work with roof-level wall restoration.

District: Duluth Public Schools
Facility: Facilities Management
Category: Building Code

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	HVAC: Ventilation Improvements - Shops	Inspection Date	08/18/2006
Linked System	Air Distribution Systems	Finish Date	-
Prime System	Air Distribution Systems	Status	Open
Priority	6- Does Not Meet Current Codes/Standards	Actual Cost	0
Inspector Name	Schumacher, Russ	Total Estimated Cost:	400,374
Action Date	-	Funding Type	-
Funding Year	-	Annual Energy/Ops Savings \$	-
Requirement Location	Shop		
Savings Description	-		

REQUIREMENT DESCRIPTION

The shop areas do not currently provide 2000 Mechanical Code required ventilation air.

PHOTOS



HVAC: Ventilation Improvements - Shops

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ACTION DESCRIPTION

Install new ventilation systems for the shop areas. System to consist of new air handling units with dehumidification via DX dehumidification coils and compressors. Insulated supply duct and improved general exhaust.

District: Duluth Public Schools
Facility: Facilities Management
Category: Capacity

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	HVAC: Add Cooling Capability to IT Data Room		
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:	35,636
Funding Year	-	Funding Type	-
Requirement Location	IT Data Room - Conference Room	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

The IT Data room gets hot, which could cause technology equipment failure.

PHOTOS



HVAC: Add Cooling Capability to IT Data Room

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ACTION DESCRIPTION

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

District: Duluth Public Schools
Facility: Facilities Management
Category: Deferred Maintenance

Asset Name: Facilities Management
Asset Number: 15

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:	483,800
Funding Year	-	Funding Type	-
Requirement Location	Shops	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Severely deteriorated grade-level walls at shops (roof Areas 2 and 3).

PHOTOS



Exterior Walls: Grade-Level Wall Restoration

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ACTION DESCRIPTION

Tuck pointing, rebuilding, spot brick replacement, stone sill replacement, and painting.

District: Duluth Public Schools
Facility: Facilities Management
Category: Deferred Maintenance

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	Exterior Walls: Grade-Level 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:	29,500
Funding Year	-	Funding Type	-
Requirement Location	Entire Building	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Deteriorated grade-level walls of wood and metal panels.

PHOTOS



Exterior Walls: Grade-Level Wall Restoration

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ACTION DESCRIPTION

Paint/staining, and in fill obsolete door.

District: Duluth Public Schools
Facility: Facilities Management
Category: Deferred Maintenance

Asset Name: Facilities Management
Asset Number: 15

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:	5,900
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: Facilities Management
Category: Deferred Maintenance

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	Roof System: Replace Roof	Inspection Date	08/01/2006
Linked System	Roofing	Finish Date	-
Prime System	Roofing	Status	Open
Priority	1- Currently Critical (Immediately)	Actual Cost	0
Inspector Name	Inspec	Total Estimated Cost:	65,674
Action Date	08/01/2006	Funding Type	-
Funding Year	-	Annual Energy/Ops Savings \$	104
Requirement Location	Office/Shops		
Savings Description	Energy savings generated from improved roof insulation.		

REQUIREMENT DESCRIPTION

Roof system beyond rated service life and in poor condition. Includes roof Area 1.

PHOTOS



Roof System: Replace Roof

ACTION DESCRIPTION

Replace the BUR roof in this area. Sequence work with roof-level wall restoration.

District: Duluth Public Schools
Facility: Facilities Management
Category: Deferred Maintenance

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	Superstructure: Waterproof Garage 213 Slab		
Linked System	Superstructure	Inspection Date	09/15/2006
Prime System	Superstructure	Finish Date	-
Priority	2- Potentially Critical (1-2 Yrs)	Status	Open
Inspector Name	Fern, Bob	Actual Cost	0
Action Date	09/15/2007	Total Estimated Cost:	29,382
Funding Year	-	Funding Type	-
Requirement Location	Garage 213	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Existing garage slab permits water to filter through slab and is deteriorating wood joists below.

PHOTOS



Superstructure: Waterproof Garage 213 Slab

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Superstructure: Waterproof Garage 213 Slab

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All Costs in USD.

ACTION DESCRIPTION

Prepare concrete surface for application of waterproof barrier and coating. Repair/replace damaged joists. 1100 SQFT

District: Duluth Public Schools
Facility: Facilities Management
Category: Energy and Operational Efficiency

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	Controls: VendingMiser Vending Machine Controls		
Linked System	Controls and Instrumentation	Inspection Date	10/05/2006
Prime System	Controls and Instrumentation	Finish Date	-
Priority	1- Currently Critical (Immediately)	Status	Open
Inspector Name	Ruud, Mark	Actual Cost	0
Action Date	10/05/2006	Total Estimated Cost:	826
Funding Year	-	Funding Type	-
Requirement Location	Vending Machines	Annual Energy/Ops Savings \$	90
Savings Description	VendingMiser controls cycle power to the vending machine during unoccupied times to save energy.		

REQUIREMENT DESCRIPTION

Install VendingMiser controls on vending machines.

PHOTOS

ACTION DESCRIPTION

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District: Duluth Public Schools
Facility: Facilities Management
Category: Energy and Operational Efficiency

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	Exterior: Replace Overhead Doors		
Linked System	Exterior Doors	Inspection Date	10/05/2006
Prime System	Exterior Doors	Finish Date	-
Priority	1- Currently Critical (Immediately)	Status	Open
Inspector Name	Ruud, Mark	Actual Cost	0
Action Date	10/05/2006	Total Estimated Cost:	4,956
Funding Year	-	Funding Type	-
Requirement Location	Over Head Doors	Annual Energy/Ops Savings \$	330
Savings Description	Energy savings generated from improved door insulation values and reduced infiltration.		

REQUIREMENT DESCRIPTION

Replace existing over head doors with new insulated doors.

PHOTOS

ACTION DESCRIPTION

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District: Duluth Public Schools
Facility: Facilities Management
Category: Energy and Operational Efficiency

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	Exterior: Window Replacement		
Linked System	Exterior Windows	Inspection Date	10/05/2006
Prime System	Exterior Windows	Finish Date	-
Priority	5- Recommendations/ Improvements	Status	Open
Inspector Name	Ruud, Mark	Actual Cost	0
Action Date	-	Total Estimated Cost:	32,332
Funding Year	-	Funding Type	-
Requirement Location	Exterior Windows	Annual Energy/Ops Savings \$	598
Savings Description	Energy savings generated from improved window insulation values and reduced infiltration.		

REQUIREMENT DESCRIPTION

Replace existing windows that are in poor condition with new Traco double hung low e thermopane windows.

PHOTOS

ACTION DESCRIPTION

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District: Duluth Public Schools
Facility: Facilities Management
Category: Energy and Operational Efficiency

Asset Name: Facilities Management
Asset Number: 15

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:	4,873
Funding Year	-	Funding Type	-
Requirement Location	Facility Wide	Annual Energy/Ops Savings \$	694
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

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District: Duluth Public Schools
Facility: Facilities Management
Category: Energy and Operational Efficiency

Asset Name: Facilities Management
Asset Number: 15

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:	19,530
Action Date	09/20/2006	Funding Type	-
Funding Year	-	Annual Energy/Ops Savings \$	435
Requirement Location	Entire Facility		
Savings Description	Energy savings generated through more efficient lighting technology.		

REQUIREMENT DESCRIPTION

Lighting project consists of the following:

- 1) Relamp 32w T8 lamps with 25w T8 lamps
- 2) Replace HID lighting with T8 lighting fixtures
- 3) Replace Incand. lighting with Fluorescent
- 4) Upgrade exit signs with LED technology

PHOTOS

ACTION DESCRIPTION

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District: Duluth Public Schools
Facility: Facilities Management
Category: Energy and Operational Efficiency

Asset Name: Facilities Management
Asset Number: 15

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:	2,669
Funding Year	-	Funding Type	-
Requirement Location	Entire Facility	Annual Energy/Ops Savings \$	196
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

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District: Duluth Public Schools
Facility: Facilities Management
Category: Life Safety

Asset Name: Facilities Management
Asset Number: 15

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:	944,000
Funding Year	-	Funding Type	-
Requirement Location	Office/Shops	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Severely deteriorated grade-level walls; including an area of fallen brick and spalled stone at office/shops (roof Areas 1 and 4).

PHOTOS



Exterior Walls: Grade-Level Wall Restoration

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ACTION DESCRIPTION

Tuck pointing, rebuilding, spot brick and stone replacement, joint sealant replacement, and painting. Sequence work with reroofing.

District: Duluth Public Schools
Facility: Facilities Management
Category: Life Safety

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	Fire Protection: Add Fire Protection Sprinkler System		
Linked System	Fire Protection	Inspection Date	07/13/2006
Prime System	Fire Protection	Finish Date	-
Priority	5- Recommendations/ Improvements	Status	Open
Inspector Name	Schumacher, Russ	Actual Cost	0
Action Date	-	Total Estimated Cost:	88,500
Funding Year	-	Funding Type	-
Requirement Location	Building Wide	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Facilities Management does not currently have a fire protection sprinkler system. Although this was not required by code during the original construction, the district may want to consider sprinkling this building for facility consistency.

PHOTOS



Fire Protection: Add Fire Protection Sprinkler System

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ACTION DESCRIPTION

Install new wet fire protection sprinkler system throughout building.

District: Duluth Public Schools
Facility: Facilities Management
Category: Life Safety

Asset Name: Facilities Management
Asset Number: 15

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:	12,572
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: Facilities Management
Category: Life Safety

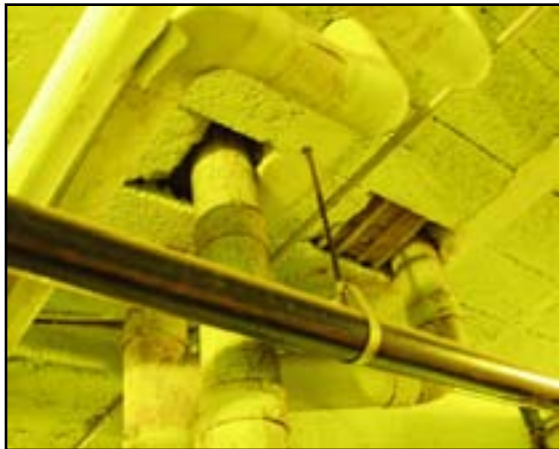
Asset Name: Facilities Management
Asset Number: 15

Requirement Name	Superstructure: Firestop Penetrations Through Floors		
Linked System	Superstructure	Inspection Date	09/15/2006
Prime System	Superstructure	Finish Date	-
Priority	2- Potentially Critical (1-2 Yrs)	Status	Open
Inspector Name	Fern, Bob	Actual Cost	0
Action Date	09/15/2007	Total Estimated Cost:	5,251
Funding Year	-	Funding Type	-
Requirement Location	Main Office/ Garage Building	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Existing penetrations for ductwork and piping need to be sealed to prevent transfer of air/ smoke and water between levels.

PHOTOS



Superstructure: Firestop Penetrations Through Floors

-



Superstructure: Firestop Penetrations Through Floors

-

ACTION DESCRIPTION

In fill various opening through floor levels as required.

District: Duluth Public Schools
Facility: Facilities Management
Category: Occupant Security

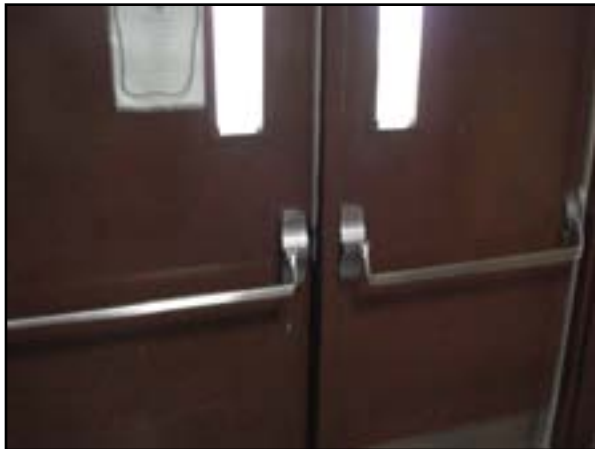
Asset Name: Facilities Management
Asset Number: 15

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:	10,384
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 2 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: Facilities Management
Category: Occupant Security

Asset Name: Facilities Management
Asset Number: 15

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:	45,548
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: Facilities Management
Category: Upgrades

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	Communication and Security: Cabling Upgrade		
Linked System	Communications and Security	Inspection Date	08/16/2006
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:	32,450
Funding Year	-	Funding Type	-
Requirement Location	Entire Facility	Annual Energy/Ops Savings \$	-
Savings Description	-		

REQUIREMENT DESCRIPTION

Existing building contains older category of cabling.

PHOTOS

ACTION DESCRIPTION

Replace older telephone/data cabling with up to date category 6 of 6A. Add basic wireless coverage.

District: Duluth Public Schools
Facility: Facilities Management
Category: Upgrades

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	Communication and Security: Video/TV Distribution Upgrade		
Linked System	Communications and Security	Inspection Date	08/16/2006
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	08/16/2009	Total Estimated Cost:	2,596
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 administrative areas as required.

District: Duluth Public Schools
Facility: Facilities Management
Category: Upgrades

Asset Name: Facilities Management
Asset Number: 15

Requirement Name	Controls and Instrumentation: BAS and Controls Upgrade		
Linked System	Controls and Instrumentation	Inspection Date	07/11/2006
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	07/11/2007	Total Estimated Cost:	88,500
Funding Year	-	Funding Type	-
Requirement Location	Entire Building	Annual Energy/Ops Savings \$	784
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.

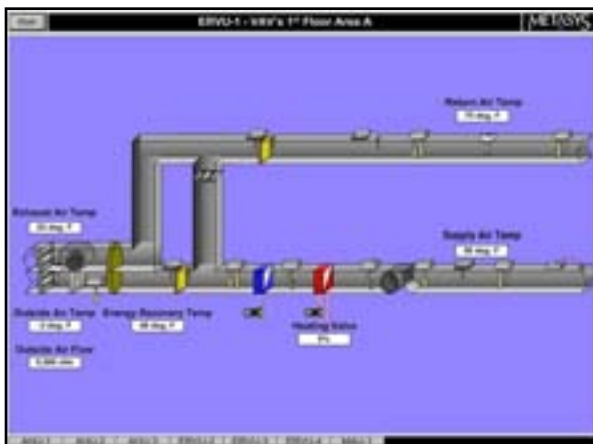
Upgrade existing pneumatic controls (old technology) to new Direct Digital controls.

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



BAS Graphic

-

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.