

1904 Stickney & Austin-designed Sanitary (Canton Ave. Restroom) (Pressley Associates 2007).

A. Architecture Appendices

1. Existing Building Evaluation

Trailside Museum Visitor Wing Exhibit Wing Lecture Wing

Sanitary Building Garage Ancillary Buildings

ARCHITECTURE AND INTERIORS

Building Inventory and Evaluation

The buildings and structures at the Trailside site consist of the following:

- 1. The museum complex, which includes the Visitor, Exhibit and Lecture wings,
- 2. The "Sanitary" building, containing public toilets,
- 3. A garage, and
- 4. Various sheds and barns for exhibit animals or for visitor viewing of them.

Schwartz/Silver Architects staff gathered information on these existing buildings in summer 2007, through review of existing architectural drawings, on-site measurement and photography, staff interviews and observations of building materials and conditions. Information and commentary on each building appears in the following pages, in the order indicated above.

Conditions at the buildings vary considerably. The complex, with its multiple wing additions and successive renovations, exhibits an especially broad range of quality in basic construction, mechanical and electrical systems, and preservation of original building materials. The main public level is at a different elevation in each of the three wings. Fundamentally it is more like a group of connected buildings than a single building, and this both directly affects its current use and will be a major factor in any renovation. Staff areas are fragmented; public spaces are linked by awkward stairs and ramps; many spaces have too much or too little daylight.

To the extent that the complex has any consistent architectural style, it resembles a New England farmhouse with attached barns. The 1956 Exhibit Wing joined the 1898 pre-existing house (the Visitor Wing) as a barn-like extension towards the north; the 1975 Lecture Wing has a more literal barn appearance and dominates the complex because of its size and its proximity to the road. It is not clear whether the farmhouse style was ever directly related to the educational purpose of the museum; it seems more likely that, with the house as a starting point, making building additions in the form of barns simply seemed appropriate and familiar. From the perspective of either an educator or a visitor the farm setting now seems arbitrary at best, and occasionally counter to the programs and the exhibits, which include wild animals and environments rather than domesticated ones. There are nearby sites around Blue Hill that have open agricultural land, but the Trailside Site has parking lots on two sides, a heavily traveled local road on a third, and a forested hillside on the fourth. For a renewal or replacement of the Trailside buildings, the educational direction of Trailside and the wooded environment on Blue Hill might provide starting points for an appropriate architecture.

The smaller buildings around the museum itself are simply functional and relatively new; they are in service of the outdoor exhibits and staff operations. The 1904 Stickney & Austin Sanitary building is an interesting structure remaining from an earlier development of the north part of the site. It has high historic value but is in poor condition and it not accessible.

Prior to the assessments conducted for this report, separate assessments had been conducted by DCR, as listed below. Excerpts from these assessments are attached at the end of this section.

- Energy audit
- Asbestos survey.



Trailside Site Plan

The architectural survey included the following buildings and structures:

- A. The Existing Museum Building
- B. The 1904 Stickney & Austin Sanitary Building
- C. The Trailside Garage
- D. The Trailside Ancillary Structures duck blind, sheds, and barn





Aerial view of Trailside from the north.



Aerial view of Trailside from the east.



Aerial view of the Trailside from the west.

Overview

Trailside consists of three distinct structures:

- 1. The Visitor Orientation Wing the original superintendent's residence, built in 1898
- 2. The Exhibit Wing an addition built in 1956
- 3. The Lecture Wing an addition built in 1975.

Aerial view of Trailside from the south.



Trailside

Visitor Wing, 1898

Exterior Views



South façade. Trailside Museum Entrance. Staff Vehicles share access road with the visiting pedestrians.



East façade. A new accessible ramp has recently been completed at the entrance. Note perimeter fence gate at left.





Northeast corner. Exterior stair access to the lower level animal quarantine area is shielded by a low fence.



Trailside





Trailside

Visitor Wing

Interior Views

First floor entrance and ticketing; reception desk at right.





First floor entrance and ticketing; view back towards entry doors.



First floor gift shop.

Visitor Wing

Interior Views



First Floor staff office.







First floor gift shop, view from shop storage closet.

Trailside

Visitor Wing

Interior Views



Second floor staff kitchen.



Second floor office.



Second floor office.

Trailside Museum

Visitor Wing

Interior Views

Second floor hallway with copiers and office support equipment.





Second floor conference room.



Second floor bathroom.

Trailside

Visitor Wing

Interior Views

Basement animal care space. Venomous snakes kept in the same room as the boiler.





Basement animal care space.



Basement animal quarantine. Unfinished walls and exposed wiring and pipes.

Visitor Wing

Interior Views



Basement animal quarantine.



Basement connection from visitor wing basement to 1975 lecture wing addition.



Unfinished basement with stone foundation exposed.

Trailside

Mechanical, Electrical,

and Plumbing





Oil-fired boiler and expansion tank.



Oil-fired hot water heater.



Electrical service panels.

Mechanical, Electrical,

and Plumbing



Well water for outdoor exhibits.



Domestic water.



Circulator pumps (7 zones of heat).

Visitor Wing,1898

Field Survey Data Sheet

Building name:	Visitor Wing : Amenities and Staff Offices
Date built:	1898
Date modified:	
Floors, areas, heights	gross sq. ft. Floor finish Floor-to-floor 2 1360 carpet (attic not occupiable) 10'-0" 1 to 2
	1 1801 resilient called elevation 100'-0"
	<u>B 1236 concrete</u>
Total:	4337
Type of construction:	Wood frame walls, floors, roof, rubble stone foundation
Siding:	aluminum
Roof:	aluminum gutters, asphalt shingle (2007 installation), chimneys OK condition
Windows:	wood six-over-six wood sash, and alum storm
HVAC system:	A/C windows units; boiler with perimeter radiators - oil fired boiler
Plumbing systems:	toilets, fountain, curator facilities
Sprinkler systems:	None
Electrical systems:	Lighting, power; emergency lighting system present
Fire alarm system:	Hard-wired system, see Electrical Evaluation following Lecture wing section
General condition:	good, varying in age
Means of egress:	Two from basement, two from 1st fl., one stair and one fire escape from 2nd fl.
Accessibility notes:	entry door lacks pull-side clearance
Other:	1st floor resilient tile 9x9" may contain asbestos

Visitor Wing c. 1890

Evaluation

General description and construction

This wing was the first structure at the site, built by the MPC as the superintendent's residence, and it retains the character of a house. This character is reflected in the relatively close spacing of its three floors, short structural spans, small rooms, corridors and window openings. The public reception areas near the first floor entry have been opened up and enlarged in recent renovations, but the lower and upper floors remain divided into smaller spaces.

Envelope

The exterior walls, windows and roof of this wing have been maintained and periodically renewed, apparently more for weathertightness than for preservation. Most of the existing exterior elements are typical for a modestly renovated house rather than for a museum or public building. It is unknown whether any insulation exists at the roof or walls. There was neither evidence nor report of major leaks through the roof.

Mechanical, Plumbing, and Fire Protectcion

HVAC System: Heating for the second floor of this building is provided through a series of hot water radiators which were previously converted from steam. The first floor is heated by perimeter fin tube radiation which was installed in 1975. The hydronic hot water is supplied from a Smith cast iron boiler located in the basement of the Lecture Wing and is connected to a 10-inch flue. The boiler was installed in 1975 and appears to be beyond its anticipated useful life. A 10-inch x 39-inch louver provides combustion air to the mechanical room.

Heating hot water is distributed to six zones through a series of Armstrong 1.5 horsepower circulation pumps. The six zones of control are Workshop (Lecture Wing), Auditorium (Lecture Wing), Common Room (Map Room of Visitor Wing), Apartment (2nd floor of Exhibit Wing), Exhibit Hall (Exhibit Wing) and Lobby/ Offices (Entry areas of Visitor Wing). The circulation pumps appear to be part of the 1975 installation and beyond their intended useful life.

Ventilation is provided via operable windows and cooling is provided by window air conditioning units.

Plumbing: The incoming water service is 3-inch copper supplied from the municipal water service and enters in the basement of the Lecture Wing. Hot water is generated from a Bock oil-fired, hot water storage tank located in the basement of the Visitor Wing. The unit was installed in 1997 and has a storage capacity of 70 gallons and recovery of 157 gallons per hour. The unit appears near the end of its anticipated useful life.

The copper piping generally appeared in fair condition with a few joints exhibiting excessive corrosion. Plumbing fixtures are in fair condition but should be replaced with modern water-conserving fixtures.

Plumbing insulation was primarily fiberglass with asbestos noted in several areas in the basement.

A 4-inch cast iron sanitary line that serves all three wings was installed in 1975 and appears to be in good condition. The sanitary line exits in the basement of the Lecture Wing and connects to the municipal sewer service.

Roof drainage consists of a series of perimeter roof gutters that collect and drain to grade. The gutter system appeared to be in good condition and there were no reported maintenance issues.

Sprinkler system: This building is currently not sprinklered.

Life Safety

There are two exits provided and signed at each of the three levels, but some of them are substandard for a museum occupancy. At the second floor, one exit is an exterior metal fire escape and the other is a steep carpeted stair. At the first floor, one exit discharges to an uncovered wood stair. At the basement, one exit discharges to an uncovered stair in an areaway, where snow can accumulate and create a hazard.

Accessibility

Public areas of the first floor comply with accessibility standards, except that the entry door at the recent entry lacks the pull side clearance at the outside. This requirement was in force at the time of the entry renovation but appears to have been overlooked in design and/or construction. Basement level and 2nd floor, which are staff-only areas, are accessed only by stairs and contain numerous barriers to persons with disabilities.

Historic or architectural resources

The form of the original house is still apparent, with a distinct gambrel roof, but few individual exterior historic elements remain to be preserved. The building appears to occupy its original farmhouse site, a natural rise along an old road, but the later Exhibit and Lecture additions have diminished the visibility and integrity of

the original domestic architecture.

Windows, doors, siding, roofing and trim have been replaced, some of them probably more than once. At the interior no historically or architecturally significant rooms are present. From a distance this wing has a quaint aspect; close up it seems more makeshift and worn out. From neither perspective does this wing seem supportive of the museum, nature education or the local environment.

Notes on current use:

The internal layout and room sizes of this wing contribute to some current operational inadequacies. At the basement, the animal quarantine area is squeezed into a very low-ceilinged space with a change in floor level; many surfaces are not washable and some animals are housed in the boiler room. The second floor offices are accessed through a narrow stair discharging into the vestibule, and are separated from first floor offices by public areas. Ventilation is by operable windows only, except for rooms where window air conditioners have been installed.

Notes for renovation:

The Visitor Wing has been renovated a few times already and it is questionable whether it merits further investment. Any expanded or renovated museum would have less use for such small rooms and low ceilings, or for the overall farmhouse character of the structure, unless this building style was purposefully included in the project. A hazardous materials survey should be undertaken to identify potential asbestos-containing materials such as flooring, roofing, sealants, glazing and insulation.

Trailside

Exhibit Wing 1956

Exterior Views



East facade. The Exhibits Wing joins the north side of the Visitor Wing, at left.



North façade. Windows in exhibit spaces overlook the pond.



West façade. Pressure-treated wood deck space between the Exhibit Hall and the Lecture Hall.



Trailside





Trailside

Exhibit Wing

Interior Views

The first floor exhibit hall is a double height open space with exposed wood laminated roof beams.





First floor exhibit hall, raised area along east side.



First floor exhibit hall, north end. Note the stairs leading from the raised area; there is no accessible connection..

Exhibit Wing

Interior Views

First floor exhibit hall. Raised level on the left, lower level on the right.





First floor exhibit hall. Windows from the exhibit hall offer views to the exterior allowing for a connection between the exhibits and the landscaped pond.



First floor exhibit hall stairs. The circulation in the exhibit hall has numerous stairs and currently is not accessible.

Trailside

Exhibit Wing

Interior Views

Basement level at exhibit hall. Currently used for general storage. Space is damp and lacks heat and ventilation.





Basement level of exhibit hall. CMU columns on concrete footings.



Basement level of the exhibit hall has an earth floor and no damp proofing at walls or floor.

Exhibit Wing

Exterior Views



New exhibit wing. Asphalt shingles at sloped roof. New EPDM membrane at flat roofs.



Partial west façade of exhibit wing. New roof and downspout. Vertical wood siding.



Northeast corner of exhibit hall. Uncovered emergency egress stair.

Trailside Museum

Exhibit Wing

Field Survey Data Sheet

Building name:	Exhibit Wing	
Date built:	1956	
Date modified:		
Floors, areas, heights	gross sq. ft. Floor finish Floor-to-floor	
	<u>1 1975 Resilient</u> Elev. 100'-0" - 2'-5"	
	<u> </u>	
Total:	3889	
Type of construction:	Wood framing, with laminated wood arches at roof. First floor 2x10's @ 1 on center, steel beams 12"deep x 4"wide, spanning 10'-2" between center lines of CMU piers and concrete piers.	6" эr
Siding:	Vertical board/batten wood siding	
Roof:	Asphalt shingle roof and aluminum gutters (2007 installation)	
Windows:	Operable steel casements and fixed glass; single glazed	
HVAC system:	Perimeter radiation - heat only- oil fired boiler	
Plumbing systems:	none	
Sprinkler systems:	none	
Electrical systems:	Lighting, Power, Exhibit Lighting, Emergency Lighting	
Fire alarm system:	Hard-wired system, see Electrical evaluation following Lecture Wing sect	ion
General condition:	poor to fair	
Means of egress:	(3) from Hall	
Building code notes:		
Accessibility notes:	(2) Levels in hall; Stairs connect. Access via lecture hall ramps	
Other:	Basement ventilation openings blocked; space is very damp. Acoustical ceiling tile at exhibit hall ceiling may contain asbestos.	

Trailside Museum

Exhibit Wing

Evaluation

General description and construction

The Exhibit Wing is a single large hall with a vaulted ceiling under a gable roof. The major floor beams are steel and the roof beams are laminated wood, with the remainder built in ordinary wood construction on concrete foundations. It has large windows at the north end, overlooking the pond. Below the hall is a dirt-floored crawlspace currently used for storage. Nearly half of the exhibit hall has a raised floor level, built above a single structural floor deck.

Envelope

The asphalt shingle roof is in good condition but exterior doors, windows, siding and trim appear to be original and are in fair to poor condition. The windows are single-glazed and there is some rot in the frames. It is unknown whether any insulation exists at the roof or walls.

Mechanical, Plumbing and Fire Protection

HVAC System: The basement floor is unheated crawl space and the first floor is heated by perimeter fin tube radiation. The hydronic hot water is supplied from the Smith cast iron boiler located in the basement of the Visitor Wing. Ventilation is provided via operable windows. Cooling and exhaust are not present in this wing.

Plumbing: A 2-inch well water service is located in the crawl space of the Exhibit Wing. A 1 ½ hp power pump provides make-up water to the wildlife ponds. The pump appears is a PumpTec Model No. 5800020100 and appears to be in good condition. There is no other domestic plumbing in this wing.

Roof drainage consists of a series of perimeter roof gutters that collect and drain to grade. The gutter system appeared to be in good condition and there were no reported maintenance issues.

Fire Protection: This building is currently not sprinklered.

Life Safety

There are (3) exits from the hall, one each to the Visitor and Lecture Wings and one directly to an uncovered exterior stair.

Accessibility

This wing was designed and constructed before current accessibility codes and does not appear to have

been modified to conform to them. Its main exhibit area has high and low floor areas connected by short stairs. The high area aligns with the first floor of the Visitor Wing; the low area was made accessible by a ramp included in the connector to the Lecture Wing. A person with disabilities cannot make the circuit of exhibits without leaving the wing and re-entering through another door.

Historic or architectural resources

This wing appears to have been intended to resemble a barn, with its simple gable roof and red-painted vertical board siding. The large windows and the laminated roof framing are typical features of 1950's modern wood construction.

Notes on current use:

The exhibit hall is entirely occupied by fixed exhibits, and is also used for small group gatherings and animal talks. It has no central space but rather a large exhibit loop, with one crossover stair in the middle. Some of the exhibits make use of the pond view. The lower level earth-floored area was designed as a ventilated crawlspace, but at some point the vents were closed up and a great deal of stored materials accumulated. Without ventilation, the lower level is very damp.

Notes for renovation:

If renovated for educational use this wing would require significant investment, to upgrade mechanical and electrical systems, create an efficient building envelope, and to replace all the doors and windows. A hazardous materials survey should be undertaken to identify potential asbestos-containing materials such as flooring, roofing, sealants, glazing and insulation.

Trailside

Lecture Wing 1975

Exterior Views

South façade of lecture wing. Lecture wing addition includes main barn structure and connector to Visitor and Exhibit Wings.





West façade of lecture wing; view from road. Double door opens out from shop space. Skylights bring light in to 2nd floor loft spaces.



North façade of lecture wing. Lower level doors open out from animal care space. First floor sliding door provides natural lightat the back of the main hall.


Trailside





Trailside

Lecture Wing

Interior Views



First floor lecture hall. View towards east, with presentation platform at right.



First floor lecture hall. View of northwest corner with stair to second floor loft space



First floor lecture hall. View of northeast corner, and ramp to Exhibit Wing.

Lecture Wing

Interior Views

First floor connector. Ramp to exhibit hall. Exterior wood deck through doors at left.





First floor connector. View to the south. Lecture hall to the right, map room and restroom to the left.



First floor connector. View to the west. Lecture hall door at bottom of ramp; visitors are directed to enter by another pair of doors to the right, out of sight in this view.

Trailside

Lecture Wing

Interior Views

Lower level office, in animal care area.





Lower level wood shop. View to the west exterior doors beyond.



Lower level wood shop. View to the east. Interior door to lower level connector.

Lecture Wing

Interior Views



Lower level animal care kitchen.



Lower level animal care.



Lower level animal care.

Trailside

Lecture Wing

Interior Views



Second floor loft located above lecture hall.



First floor toilet room, in connector.



Lower level staff lockers.

Lecture Wing

Interior Views

Stair to lower level from first level connector; staff access only.





Lower level animal care. Detail of wood tree-trunk column with seamless washable floor.



Second floor loft. Detail of wood truss.

Trailside

Lecture Wing

Exterior Views

South façade of connector. Note uncovered wood exit stair and metal fire escape.





East façade of lecture hall. North façade of connector to the left. Shades are used at glass doors to control glare into lecture hall.



Lower level doors at animal care.

Lecture Wing

Exterior Views



Roof of connector. Wood deck below.



Roof of connector. Visitor wing beyond.



Detail of membrane roofing.

Trailside Museum

Lecture Wing

Field Survey Data Sheet

Building name:	Lecture	Wing - Inclue			
Date built:	ramp do 1975	wn to Exhibi			
Data madified:					
Date modified.		gross sq. ft.	floor finish		_
Floors, areas, heights	loft	675	carpet	floor to floor	
	1	2774	carpet	9-0	Elev. 100'-0" - 1'-0"
	В	2499	conc / resil	9'-5"	Basement to 1st
Total:		5918			
Type of construction:	Heavy w sawn tir Concret	vood frame: nber and lum e block walls	tree trunk colu ber framing.	mns, laminated 1st floor beams	wood beams at 1st floor, are paired 16" x 3 1/2".
Siding:	Aluminu	Im			
Roof:	Asphalt installat	shingle at "b ion	oarn", membra	ne roof at conned	ctor to other wings; 2007
Windows:	Sliding g	glass doors,	casements, fix	ked types. Insul	ated and single glazing are
HVAC system:	Perimet	er radiation h	eating. Ducte	d air system with	n cooling in Animal Care - oil
Plumbing systems:	Kitchen	, Aquariums	at Animal Car	е	
Sprinkler systems:	None				
Electrical systems:	Lighting	, Power, Equ	ipment (HVA0	C, Workshop)	
Fire alarm system:	Hard-wi	ed system, s	see Electrical	Evaluation follow	ing Lecture Wing section
General condition:	Good				
Means of egress:	OK, (3)	from Hall, (2)) from each otl	ner level	
Accessibility notes:	OK exc	ept toilet roo	ms not access	sible.	

Trailside Museum

Lecture Wing

Evaluation

General description and construction

The Lecture Wing contains a single large hall on the first (public) level, a staff wood shop and animal care facility at the lower level, and a storage loft above part of the main hall. The structure is wood and concrete block, with major columns made from complete tree trunks and major beams of sawn and laminated timber. The lower level has a slab on grade with walk-out openings to the boardwalk along the pond. The exposed wood and vaulted ceiling give the main hall a somewhat rustic character, which is undercut by the low level of daylight in the room except for a single large window overlooking the pond.

Envelope

The exterior wood-clapboard siding and asphalt shingle roof are in good condition. Windows include both insulated glass and single-glazing types, with sliding glass doors in several locations. Some of the skylights have leaked. It is unknown whether any insulation exists at the roof or walls. The lightning protection system may be incompletely connected or grounded.

Mechanical, Plumbing and Fire Protection

HVAC System: Heating for this building is provided by a hydronic, hot water system which appears to be in good condition. The staff work areas located on the lower level and Lecture Hall located on the upper level are served by perimeter fin tube radiation. The upper level corridors are heated with cabinet unit heaters. The hydronic hot water is supplied from the Smith cast iron boiler located in the basement of the Visitor Wing.

Cooling and ventilation is provided by a Mitsubishi Electric energy recovery ventilator, Model No. HE2X900, with a heat pump section, Model No. G+FD048H24A, located in the basement of the Lecture Wing. This unit provides cooling to the staff work areas in the basement as well as the Main Lecture Hall on the upper level. The unit appears to be approximately 10 years old and in good operating condition. Much of the supply ductwork, however, was not externally insulated. A review of available construction documents indicates that the ductwork may be internally lined with insulation.

Exhaust for the restrooms is provided by two rooftop fans, Greenheck Model No. G-121-BX-QD and Dayton Model No. 2RB7U. The staff reported that both exhaust fans are relatively new and in good operating condition.

Plumbing: The incoming water service is 3-inch copper supplied from the municipal water service and enters in the basement of the Lecture Wing. Hot water is generated from a Bock oil-fired, hot water storage tank

located in the basement of the Visitor Wing. The unit was installed in 1997 and has a storage capacity of 70 gallons and recovery of 157 gallons per hour. The unit appears near the end of its anticipated useful life.

The copper piping generally appeared in fair condition with a few joints exhibiting excessive corrosion.

Plumbing insulation was primarily fiberglass with asbestos noted in several areas in the basement.

Plumbing fixtures located on the upper level are in excellent condition and are modern water-conserving, ADA-compliant fixtures. The basement plumbing fixtures are in fair condition but should be replaced with modern water-conserving fixtures.

A 4-inch cast iron sanitary line that serves all three wings was installed in 1975 and appears to be in good condition. The sanitary line exits in the basement of the Lecture Wing and connects to the municipal sewer service.

Roof drainage consists of a series of perimeter roof gutters that collect and drain to grade. The gutter system appeared to be in good condition and there were no reported maintenance issues.

Fire Protection: This building is currently not sprinklered.

Life Safety

There are three exits from the main lecture hall, all leading to uncovered exterior wood stairs at the north and south sides of the complex. These stairs and the adjacent decks are very weathered. Most exits to the exterior have a sign indicating "emergency exit only", indicating the challenge of preventing visitors from using them in non-emergency conditions.

Accessibility

Public areas of the first floor comply with accessibility standards, except that the presentation platform in the hall is not accessible. Lower level and loft areas, which are staff-only, are accessed only by stairs. The multi-fixture public toilets, located in the connector built at the same time as the Lecture Wing, are too small in area to comply with current accessibility standards for door clearances, stall size and clear floor space at lavatories.

Historic or architectural resources

As this wing is only about thirty years old its primary asset value is in providing program space for public and staff functions. A significant architectural feature is its tree-trunk structure, which creates both the main hall space and the gable form of the roof. Although it is not apparent from the interior or exterior, the perimeter walls are built of concrete masonry units.

Notes on current use:

Basement-level staff areas are well-ordered, uncrowded and comfortable, with both heating and cooling in the animal care room. The first-floor Lecture room is somewhat worn from use, and has no wall or ceiling treatments to promote a good acoustical environment for large group presentations, which is the most demanding use of this space.

Notes for renovation:

Of the three wings, the Lecture Wing is in the best condition and has the most up-to-date building systems. Any renovation should consider improvements to the hall interior, envelope thermal efficiency, means of egress, toilet room accessibility, and possibly daylighting

Trailside Museum

Electrical Evaluation

Electrical - Existing Conditions:

The main electrical service lateral originates at a riser pole, runs underground from the riser pole and terminates in the main service disconnect (combination current transformer/main circuit breaker unit) located on the basement level of the 1975 Addition. The main electrical service is a 400 amp 120/240 volt 1Phase 3 wire system. The service lateral terminates in a combination current transformer/main circuit breaker unit - 400 amp /2P MCB configured for hot sequence metering. The utility meter for the service is located adjacent to the combination unit. Also, adjacent to the combination unit is the main distribution panel "DP" - 400 amp 120/240 volt 1 phase 3 wire panel with 8 Poles. Distribution panel "DP" contains three (3) circuit breakers (CB's) feeding the following:

- CB # 1 100 amp /2P feeding the original building service located in the basement of the 1890 building.
- CB # 2 100 amp/2P feeding Panel "LA" located adjacent to the distribution panel "DP" in the basement level of the 1975 building.
- CB # 3 200 amp/2P feeding Panel "LB" located on the first floor of the 1975 building in the Lecture Hall.

Note: A fourth 2-Pole space is available.

Based on the age and condition of the 1956 and 1890 building electrical service and distribution equipment, it is likely that the 1890 building electrical equipment was upgraded in 1956. However, in 1975 the existing electrical service for both buildings was simply re-fed with a 100A 120/240V 1Ph 3W feed off distribution panel "DP." Since 1975 it appears that some of the panelboards located throughout the facility were replaced with newer units, however many are original.

The main service equipment and most of the older or original electrical equipment in the building is manufactured by Federal Pacific Electric (FPE).

The facility does not contain an emergency generator but utilizes emergency battery units with remote heads for emergency egress lighting. The building contains multiple emergency battery units located in stairwells, closets and storage rooms. The emergency battery units serve remote heads located throughout the buildings - several different types of remote head were observed - floodlight type, recess wall mounted and recess ceiling mounted. In most areas, the quantity of remote heads appeared to be inadequate and many of the emergency battery units did not operate properly when tested.

The facility recently received an NStar Energy Audit resulting in a lighting upgrade throughout. Energyefficient fixtures were installed, replacing most incandescent fixtures with fluorescent, and replacing less efficient fluorescent fixtures utilizing magnetic ballasts and T-12 lamps with new fixtures with electronic ballasts and T-8 lamps. The interior lighting fixtures observed included the following:

- 2' x 2' surface mounted fluorescents with acrylic prismatic lenses.
- 1' x 4' surface mounted fluorescents with wrap-around acrylic prismatic lenses.
- Ceiling mounted decorative fluorescent fixtures varying styles and lenses.
- Wall mounted fixtures retrofitted with Edison-base fluorescent lamps with integral ballasts.
- 4' industrial strips with T-8 lamps.
- Many existing porcelain keyless fixtures were retrofitted with Edison-base fluorescent lamps with integral ballasts.
- Decorative cord mounted fixtures retrofitted with Edison-base fluorescent lamps with integral ballasts.
- Track light fixtures with track light-heads retrofitted with Edison-base fluorescent lamps with integral ballasts.

The lighting controls consist of line-voltage switches and in some cases dimmer switches. Some dimmer switches were observed controlling track lighting which has been retrofitted with Edison-base fluorescent lamps. Using a dimmer with Edison-base fluorescent lamps extinguishes the lamp and if not careful could cause damage premature lamp failure.

Exterior lighting observed consist primarily of HID flood lights mounted around the perimeter of the building. Some pole mounted fixtures, recessed down light fixtures and wall mounted fixtures were observed on the exterior of the building. The exterior lighting is controlled via time clocks located inside the building. However, some of the exterior fixtures were controlled via line-voltage switches.

The electrical devices observed appeared to be upgrade within the past 5-10 years and most contained a ground slot. GFCI (ground fault circuit interrupter) receptacles were observed in most areas containing a sink or located in a wet location. The device color varied throughout the building - white, ivory and brown were all observed. Cover plates were primarily stainless steel or brass but some of the newer devices utilized plastic covers. None of the devices appeared to be labeled with panelboard or branch circuit number.

The buildings contain a zoned non-coded Edwards 5700 fire alarm system. The fire alarm system does not communicate to the fire department or a remote central station - the system does not contain an auto-dialer or master box. The fire alarm control panel is located in the basement of the 1890 building. The following zones were observed:

Zone 1 - Basement Zone 2 - Lobby Zone 3 - Main Office Zone 4 - Exhibit Hall Zone 5 - Animal Care / Workshop Zone 6 - Lecture Hall

The fire alarm system utilizes horn/lights throughout. The horn/light units are not ADA-compliant and the coverage is adequate by current standards. The building needs to be reviewed for occupant capacity and possible "assembly" use as this could lead to the need for a voice evacuation system. The pull stations were located at most exits but not at all egress doors. The building contained heat detectors throughout and some units appeared to be combination smoke/heat but this would need further review. Door hold open devices were located throughout and it was confirmed by the staff that the doors release upon fire alarm system activation.

Electrical - Recommendations:

Electrical Service:

- The electrical service should be reviewed as it is inadequate to serve the 15,000-square foot building and the garage. The electrical service size proposed would vary from 400 amp 208/ 120 volt 3 phase 4 wire to 800 amp 208/120 volt 3 phase 4 wire depending on future plans -HVAC throughout, expansion, elevator, lifts, animal care area exhaust and environmental controls systems, etc.
- The existing electrical service is located directly behind the main water service and does not have the code required working clearances.
- The majority of electrical equipment is 25 to 30 years old and reached the end of useful life expectancy. Replacement parts will be difficult to obtain and expansion will be limited.

Emergency Egress Lighting:

- Consider a small emergency generator to supply life-safety lighting, power to the fire alarm system, heating system, animal care area ventilation and exhaust units and domestic water system (Well and street service).

- Emergency battery units are failing or failed based on observations.
- Remote emergency light heads are not providing the code required light levels throughout the path of egress. Also, exterior emergency egress lighting should be considered.

Interior Lighting:

- Interior lighting should be reviewed and upgrades considered. More efficient lighting fixtures and layout would result in increased energy savings.
- Introduce occupancy sensors for increased energy savings.
- Lighting controls should be reviewed to insure they are compatible with light fixtures and lamps
 i.e. the dimmers used with retro-fit fluorescent lamps is in appropriate.

Exterior Lighting:

- Exterior lighting was not observed operating but I suspect lamp colors are not all compatible replace fixtures to utilize a consistent lamp color, more energy efficient fixtures, and select night sky friendly fixtures.
- Photoelectric control should be considered for exterior lighting to compliment time clock control
 will result in energy savings.

Electrical Devices and Cover Plates:

- Replace all devices and cover plates to insure consistent color.
- Test each device to determine the device has an effective ground.
- Introduce GFCI devices or circuit breakers where appropriate.

Fire Alarm System:

- The extent of fire alarm work will vary based on the extent of sprinkler work performed throughout the building less coverage required in a fully-sprinklered building.
- Recommend a new analog addressable fire alarm system get installed throughout.
- Replace all fire alarm devices pull stations, horn/strobe units, smoke detectors, heat detectors, etc.
- Review device cover to comply with current code. Provide ADA compliant devices.
- If a sprinkler system is added the tamper, flow, alarm and pressure switches will need to be connected to the fire alarm system.
- Include a municipal connection direct to the fire department to report all alarms directly to the fire department. Utilize a master box or radio call box.
- Include an auto-dialer for a central station connection and page assigned staff with all supervisory, trouble and alarm signals.

Stickney & Austin

Sanitary Building 1904

(Canton Ave. Restroom)

Exterior Views

South façade. Lattice panels are not original.





West façade. Entrance to women's restroom is visible from this elevation.

North façade faces parking area.

East façade faces wooded hillside.





Sanitary Building

(Canton Ave. Restroom)

First Floor Plan





Stickney & Austin

Sanitary Building

(Canton Ave. Restroom)

Interior Views



Men's room water closets currently under renovation



Men's room urinals before renovation



Men's room urinals during renovation



Men's room lavatories before renovation

Men's room lavatories during renovation



Sanitary Building

(Canton Ave. Restroom)

Exterior Views



Detail of exposed wood rafters.



Detail of entrance to women's room.



Detail of wood windows, south facade.

Stickney & Austin

Sanitary Building

(Canton Ave. Restroom)

Exterior Views

Detail of projecting bay window at south.





Detail of foundation and building sill.



Detail of ventilation opening to basement.

Sanitary Building

(Canton Ave. Restroom)

Exterior Views



New wood shingle roof.



Detail of chimney cap. Recently rebuilt.



Detail of gutter and downspout.

Sanitary Building (Canton Ave. Restroom)

Field Survey Data Sheet

Building name:	Sanitary								
Date built:	1904								
Date modified:	2008								
Floors, areas, heights	gross sq. ft. floor finish floor to floor								
	First floor elevated 4'-10" above grade								
	<u>approx 8'-0"</u> basement to first								
	<u> </u>								
Total:	1532								
Type of construction:	Wood frame, stone foundation								
Siding:	8" wood shiplap								
Roof:	Cedar Shingle								
Windows:	Wood, Divided, Single glazed; Repaired and Painted 2008								
HVAC system:	Oil fired forced hot air heat. Small electrical unit heater/ Mechanical ventilation								
Sprinkler system:	none								
Plumbing systems:	Lavatories, water closets, urinals								
Electrical systems:	Lighting; All new 2008								
Other systems:									
General condition:	Renovated Summer 2008								
Means of egress:	(1) each room								
Accessibility notes:	Non-accessible entry stairs								
Other:	2 accessible toilet rooms added at rear 2008								

Sanitary Building (Canton Ave. Restroom)

Evaluation

General description and construction

The 1904 Stickney & Austin Sanitary building stands outside the Trailside area proper, at the south end of the north parking lot and beyond the perimeter fence at the outdoor exhibits. Nearby once stood also the "Refectory", a warm-weather refreshments pavilion. Both buildings were apparently developed as a Trolley rest stop, and were designed in a rustic chalet style with dark-stained wood ornament, projecting square windows and deep roof overhangs. Only the Sanitary now remains, as a seasonal public toilet facility available to Blue Hill visitors generally as well as visitors. The first floor is raised about five feet above the ground, and is divided into separate multi-fixture toilet rooms for men and women. Below the first floor is a basement accessed from a bulkhead at the east side of the building. Currently the building is in the process of being renovated and new accessible bathrooms are being added to the east side of the structure. Images have been included to show both the unrenovated state and the current state of renovation.

Envelope

Most exterior elements have been repaired 2008, including windows, doors, roofing, chimney and wood trim. With the exception of the doors, most exterior elements appear to be either original or matched to original materials.

Mechanical, Plumbing and Fire Protection

HVAC System: There is a small electrical unit heater and oil forced air heating added in 2008. There is no cooling for this building. Mechanical exhaust present was added in 2008. Ventilation is also provided via operable windows.

Plumbing: Plumbing fixtures were replaced in 2008 with modern water-conserving fixtures. Waterless urinals and low flow toilets were added. The incoming water and service lines in the basement are new including backflow preventer and water meter.

Fire Protection: This building is currently not sprinklered and is not required to be sprinklered.

Life Safety

No exit signs or fire alarm devices were observed. The stairs do not comply with current codes for new construction.

Accessibility

The building is planned to be in compliance with current accessibility regulations. In main bathroom, entry is via stairs only, and the doors lack accessible clearances. Two new accessible rooms are compliant.

Historic or architectural resources

Much of the exterior is being renovated and mauny of the existing original materials are substantially intact and help the building retain its architectural interest. Its current siting, in front of the wooded slope of the hill and set back far from the road, continues to support the building's historic character. At the interior, the paneled wood toilet compartments and doors have been removed and new partitions and doors are being planned.

Notes on current use:

The building will contain six new toilet fixtures for women and 2 toilets and 3 urinals for men, plus 2 fully accessible toilet rooms are being planned for the east side of the building. Because it has no heating system, the building is open only in warm weather. This survey did not establish the adequacy of the number of fixtures, but there is likely demand for public toilets due to the adjacent trailheads for the Blue Hill Reservation and visitor group arrivals and departures. In the future the building is expected to be used all year long.

Notes for renovation:

The terrazzo floors are planned to be repaired and refinished.

Trailside

Garage

Exterior



North façade with pair of residential sized garage doors. Animal pen at left.



East façade.



West façade. Animal pen attached to side of garage.

Garage

First Floor Plan





Trailside

Garage



South façade.



East façade.



View of animal pen.

Garage



Interior view to the north.



Interior view to the west.



Interior view of loft space looking east.

Trailside

Garage

Field Survey Data Sheet

Building name:	Garage	•				
Date built:	approx	. 1980	_			
Date modified:						
Floors, areas, heights	loft	gross sq., ft. 244	floor finish wood	floor-to-floor _		
	1	489	conc	9'-4"	1st floor to loft	
				_		
Total:		733		_		
Type of construction:	Wood f	rame, concret	te slab on gra	de		
Siding:	Wood,	vertical				
Roof:	Asphal	t shingle roof,	aluminum gu	tters		
Windows:						
HVAC system:						
Plumbing systems:						
Electrical systems:	Fluores	cent lighting				
Other systems:						
General condition:	Good					
Means of egress:	Side D	oor				
Accessibility notes:	Not put	olic				
Other:	Manual	wood panel g	garage doors			

Garage

Evaluation

General description, construction, envelope, systems

The garage is a simple freestanding wood structure on a concrete slab, used for storage of vehicles and equipment. It has electricity but no other systems, and no wall or roof insulation. It includes a storage loft, and a small animal enclosure attached to the east side.

Notes on current use:

The current siting of the garage is awkward and creates a hazard for pedestrian visitors. Vehicles entering or leaving the garage cross the main visitor paths to exhibits and to the museum building.

Notes for renovation:

Consider relocating this building or changing its use, and (for a new building project) consider vehicle entry and parking connected to the museum building. Currently there is no loading dock or protected service entry, which means that deliveries are typically brought in through public entrances.

Trailside

Ancillary Buildings

Animal Barn



South façade.



East façade.



North façade.
Ancillary Buildings

Animal Barn

Floor Plan





Trailside Master Plan Phase 1 Submittal – Building Inventory and Evaluation Revision #02: 10/27/08

Trailside

Ancillary Buildings

Duck Blind



South façade.



West façade.



Interior.

Ancillary Buildings

Duck Blind

Floor Plan





Trailside Master Plan Phase 1 Submittal – Building Inventory and Evaluation Revision #02: 10/27/08

Trailside

Ancillary Buildings

Animal Sheds



East façade of deer shed.



Westfaçade of enclosed shed.



North façade of enclosed shed.

Ancillary Buildings

Animal Barn

Building name:	Animal Barn
Date built:	unknown
Date modified:	
Floors, areas, heights	gross sq. π.
Total:	270
Type of construction:	Wood frame on concrete piers, and partial concrete slab on grade
Siding:	Wood, vertical
Roof:	Asphalt shingles, Wood gutter
Windows:	
HVAC system:	
Plumbing systems:	
Electrical systems:	Lighting
Other systems:	
General condition:	Good
Means of egress:	
Accessibility notes:	Not public
Other:	

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Trailside

Ancillary Buildings

Duck Blind

Building name:	Duck E	Blind				
Date built:	unknov	vn				
Date modified:		aross sa f		floor finish		
Floors, areas, heights			ι.		7'-2"	beight of stud wall
	1			earth/gravel	1-2	
						_
Total:		118		(measures 16	6'-4" x 8'-3"	in plan)
Type of construction:	Wood	frame; Foun	da	tions not visib	le	
Siding:	Wood	1 X 8 horizo	nta	al plank		
Roof:	Wood	shingle				
Windows:						
HVAC system:						
Plumbing systems:						
Electrical systems:						
Other systems:						
General condition:	Good					
Means of egress:						
Accessibility notes:	Thresh	old is a barr	ier	-		
Other:	Earth fl	oor				

Ancillary Buildings

Animal Sheds

Building name:	Animal Shed	
Date built:	unknown	
Date modified: Floors, areas, heights	gross sq. ft. floor finish floor-to-floor	
Total:	15	
Type of construction:	Wood frame, concrete foundation	
Siding:	Wood, vertical	
Roof:	Asphalt shingle	
Windows:		
HVAC system:		
Plumbing systems:		
Electrical systems:		
Other systems:		
General condition:	Good	
Means of egress:		
Accessibility notes:	Not Public	
Other:		

Ancillary Buildings

Evaluation

General description and construction:

These are simple wood structures directly related to live animal exhibits or viewing of animals. They are in good condition but their disposition in any future project should follow from the requirements of new or renovated exhibits.

Animal Barn:

Duck Blind: This structure is used to conceal visitors viewing the pond area from the path at the east side; there are narrow viewing slots through the wall facing the pond, so that ducks and other wildlife at the pond will not be disturbed. To be fully accessible to visitors with disabilities, the wood threshold at the entry should be removed or modified.

Animal Sheds: This structure is a weather shelter for live animals in the outdoor exhibits.