POINT PINOS LIGHTHOUSE

PACIFIC GROVE CALIFORNIA

PRESERVATION PLAN

SUBMITTED BY: LIGHTHOUSE
PRESERVATIONIST, LLC.

August 2009

TABLE OF CONTENTS

INTRODUCTION

August 1, 2009

This document has been produced at the request of the City of Pacific Grove, owners of the Point Pinos Lighthouse. It has been developed to be used as a guide for the preservation, restoration, maintenance, and possible future expanded interpretation of the Point Pinos Light Station. Particular importance on its implementation has been to draw attention to the proper techniques recommended to identify, inventory, and preserve all re-useable historic fabric, to protect all evidence existing on site that will be crucial to an authentic and accurate restoration project, to develop a preservation methodology that will instill the proper preservation ethic, awareness and appreciation in the group of volunteers, staff & contractors involved in this project, and to protect the natural and scenic environment in which the lighthouse is situated as well as to safeguard the staff, contractors and volunteers conducting work on site.

There are areas of significant concern which we must communicate based on the findings of our site visit in April of 2009. We have placed specific emphasis on the immediate need to address the areas which we find to pose the greatest threat to staff and visitor safety as well as creating a potential for major damage to the lighthouse and related fabric.

While we realize that funding is a major challenge for your City, some of these conditions cannot and should not be deferred as failure to correct them will only increase damage to those areas as well as associated cost to repair or replace damaged fabric. Work on historic cast iron requires a higher level of expertise than does work on ductile steel. Repair and replacement of historic brick also requires a higher level of craftsmanship than modern construction.

Sincerely;

Henry Gonzales, Ralph Eshelman, Cullen Chambers

Lighthouse Preservervanist ,Inc.

Point Pinos Lighthouse

Preservation Plan:

Introduction.

The purpose of the Point Pinos Lighthouse Preservation Plan is to help identify significant and contributing features, elements, physical evidence, and fabric located in and on the lighthouse. Once identified, steps must be taken to preserve and restore those resources. Both general and specific recommendations have been provided in order to detail appropriate techniques for treatment and care for those resources which adhere to The Secretary of the Interior Standards for the Treatment of Historic Properties.

The Preservation Plan covers specific features, elements, physical evidence, and fabric related to the ultimate preservation, restoration, and maintenance of this unique and irreplaceable resource. The conclusions of the consultants in making specific recommendations are based on the understanding that the lighthouse will not be restored to a "time specific" period of interpretation, will be used for exhibits and orientation in other selected areas; and will be programmed to continue to accommodate limited visitor access in most areas of the lighthouse. It is assumed that most of the preliminary work will be performed by staff, volunteers , qualified contractors and with qualified consultants providing design work.

Photos with descriptive narratives have been incorporated into the Preservation Plan to provide a visible reference to the recommendations. Applicable Preservation Briefs have also been provided as an addendum to be used as additional guides and reference points for participants in the Point Pinos Lighthouse Project. Recommended materials, products, and specialized consultants have also been provided. Introduction:

HISTORIC ASSETS- ELEMENTS/FABRIC/FEATURES

INVENTORY:

An inventory of significant historic elements, fabric, and features should be compiled at the Point Pinos Lighthouse. We have attempted to identify all significant assets of the Lighthouse but obviously some assets may not have been visible or conspicuous during the time of our visits and therefore overlooked. Hopefully, the owner/staff/volunteer will gain enough insight into what qualifies as historically significant and be able to identify those found in and on the lighthouse in order to take proper and protective steps to insure their preservation.

The materials used throughout the lighthouse are significant to the historic character of the Point Pinos Lighthouse and contribute greatly to the historical integrity of the building. Therefore, it is imperative that special steps be taken to label, protect, and preserve these defining components. Any action or treatment must adhere to the Secretary of the Interior Standards. Use of the Preservation Briefs, provided in this Plan will serve as useful references for appropriate treatment.

Because of the high level of historical integrity of and condition of the historic fabric and character of the Point Pinos Lighthouse, the entire structure is considered to be significant. The rarity of experiencing one of California's oldest lighthouses in its original historic setting and context is noted. Most of the fabric and features on both the exterior and interior are either original or matches in nearly every aspect, the historic fabric it replaced or repaired with the noted exception of the "lantern room" which has had some aluminum replacement fabric installed.

The highest degree of sensitivity must be used in treatment of all fabric historically associated with the Point Pinos Lighthouse. Outstanding features such as the stairs, railings, landings, masonry walls, remaining wood windows, doors, siding and lens pedestal all need to be protected, preserved and restored when and where possible. Introduction Page 2 .

Why this Plan is necessary:

Because of the unique, historic and finite character of the Point Pinos Lighthouse, a Preservation Management Plan is crucial to insure that appropriate, sensitive, cost effective and responsible steps are taken in protecting, preserving, restoring, maintaining and interpreting the lighthouse; that a systematic and comprehensive methodology be provided to help guide staff and /or volunteers participating in the lighthouse project, to insure that no damage is done to irreplaceable elements, physical evidence ,features or historic fabric that will provide for an authentic and accurate restoration and interpretation of the site.

Each step, every action, every activity must be predetermined and performed in a systematic manner which stabilizes the resource, removes contemporary, extraneous , non-significant or non-contributing material, while safeguarding those materials which are significant.

Unfortunately, many irreversible mistakes have been made by eager, well intentioned staff and/or volunteers who did not realize, appreciate, or understand the importance, the role nor the information contained in evidence found in paint coatings, historic fabric, ghost and outlines on surfaces, wear patterns on floor or walls, holes in walls , floors and ceilings, even nail patterns. Unnecessary cost has also been incurred by removal of crucial historic fabric which must be replaced by custom milling later. The often-subtle information unseen by the untrained eye will be crucial in preserving and ultimately telling the significant history of the Point Pinos Lighthouse. Preservation architects will analysis the information uncovered by dedicated and well-trained volunteers and use that information to develop restoration guidelines, drawings, and specifications for the project.

Once restored, the Preservation Management Plan must be adhered to in order to protect the historic resource, provide for safe and limited staff, visitor, and volunteer access.

It is hoped that the Preservation Plan will be used by all personnel involved in the Point Pinos Lighthouse Project, as a guide to appropriate treatment techniques before, during and after restoration of the resources. Further, through the adherence of The Secretary of the Interior Standards for the Treatment of Historic Properties, it is hoped that volunteers/staff will begin to understand and appreciate the importance of preserving, protecting and maintaining the lighthouse through an informed and responsible sense of stewardship, by taking appropriate steps before significant damage occurs to historic fabric or safety features at the lighthouse.

By identifying potential problems and hazards before they become major ones, maintenance cost will be reduced, visitor and volunteers safety will be secured, a sizeable investment made during and after the restoration will be protected and the use and enjoyment of the Point Pinos Lighthouse will be realized for generations to come.

These goals carry an enormous responsibility for all involved in the project. It is hoped that use of this document will provide adequate directions in its use as not only a long-range planning document but as a guide for cyclic maintenance as well.

FORMING PARTNERSHIPS

AND

FINDING FUNDING SOURCES

Few lighthouse projects can successfully be fully and accurately restored by a single entity. More often than not partnerships must be formed between two and more interested groups in order to meet the many challenges facing a major restoration project- even a phased one. Successful lighthouse projects are legion across lighthouse holding states from the east to west coast, from the Great Lakes to the Gulf of Mexico. Their exemplary dedication and cooperation serve as guidepost for other projects.

Certainly, the Point Pinos Lighthouse can gain from developing similar partnerships by uniting the various groups and individuals in the Pacific Grove community to combine their talents, experiences and contacts to broaden the support base for the Point Pinos Lighthouse and in doing so- expand the funding opportunities required to successfully complete the Point Pinos Lighthouse through an authentic, accurate and cost effective preservation plan.

Because the Point Pinos Lighthouse is owned by the City of Pacific Grove, there are limits as to the flexibility the City Government can use to explore and utilize in funding he project. Certainly given the current economic environment in California, it is unrealistic to expect that the City of Pacific Grove or the State of California can provide all of the necessary funding now or in the foreseeable future. Therefore, it is crucial that the City of Pacific Grove seek and recruit others in the community, in the region and in the state to join in the efforts to raise funds, awareness, and appreciation to preserving the oldest functioning lighthouses in California. We have provided the following fund- raising strategy and success stories as examples that hopefully the City of Pacific Grove will utilize.

PAYING THE PIPER……
Develop a **fundraising strategy** based on realistic funding sources.
A. **Federal Grants**:
1. Department of Transportation **I.S.T.E.A.** program. (Funds are awarded to each state based on gasoline tax revenues). A portion of these transportation improvement funds are set aside for historic transportation facilities improvement, i.e. Railroad depots, lighthouses, rails to trails program, and highway landscaping.

2. **Congressional Appropriations**: If your state has an influential Congressperson or one who serves on a key committee such as appropriations develop a clear line of communications to their office and keep them informed about your project and needs. Remember, staff members are often the gatekeepers for information to and from a Congressional office.

B. **State Grants**:
1. Most states have historic preservation grant programs. Check with your state's Historic Preservation Office. **The Division of Historical Resources**

Grant opportunities in most states include the following: state agencies, local governments, and non-profit organizations. Grants are often ranked according to criteria which include: amount of local match (at least 50/50); threat to resource; and district allocation balance.
(a). **MATCHING GRANTS:** Awards levels vary.
(1). **Acquisition and development-** Excellent opportunity to offset cost of Architectural Services. Small repairs and public safety improvements which adhere to the Secretary of Interior Standards.
(2).**Survey and planning-** Primarily for communities to develop Comprehensive Plans or local historic preservation ordinances.
(3). **Community education:** Outstanding opportunity to offset cost of historic preservation related publications.
Grant cycle: Most states use a specific funding cycle beginning with a notification period. Your organization may not be on the notification list so contact your state's Historic Preservation Officer.
Once the grant application has been submitted a state review process occurs.

If successful monies may not be awarded until the following fiscal year .It is best to start with architectural services grant first as they are smaller amounts and gives the funding source confidence that a professional architect knowledgeable about historic guidelines will get the project off to the right beginning.

(b).**HISTORIC MUSEUM GRANTS:**
(1). **General Operating Support-** Funds for administration and technical operation of museum facilities open to the general public and operated by non-profit history museums are eligible.

(2) **Exhibits and educational support-** Matching funds are provided for exhibit design and fabrication, media and educational presentations and programs which relate to a facet of your state's history.

Some states have Legislative or Gubernatorial appropriations. That approach is **not recommended for states which have a strong historic preservation program which depends on annual legislative appropriations directly to a state preservation fund**. However, clear lines of communication to elected representatives are important. Invite your legislative delegation and their staff to an informal reception and presentation at your lighthouse site. Encourage their support of your state's preservation grants process.
C. **County Grants:**
1. Sales Tax Options. Often one of the most overlooked areas of funding. Again, open lines of communication to your county officials. A joint reception for all elected officials facilitates a better understanding of who might be able to do what. (Often one entity will try to "pass the buck" onto another i.e. "There's federal money for these kind of projects" or "the Coast Guard can pay for your lighthouse work". **(They can- not -that's why you have it and they do not want it).**

2**. Bed Tax**. Many tourist based local economies have a hotel/motel bed tax to provide advertising promotion. While it may be difficult to convince the advertising purist that "Bricks and Mortar " funds out of a bed tax will serve as an advertising medium, it can and has been done in many lighthouse communities.

D. **City Grants**:
1. Many small communities receive funds from state appropriations which are intended to promote a tourist based economy or help develop a stronger economic base. Few other attractions can draw visitors like a lighthouse can. One need only contact similar communities with lighthouse sites to compile a list of proven records of the economic advantages of lighthouse heritage tourism.

E**. Special Grants:**

1. Arts. (For exhibits, interpretation and special events) usually funded through Cultural Affairs or Humanities

2. Navigational Districts. Some coastal and river based communities which have active aids to navigation can tap into special funds used to develop and improve aids to navigation. Florida, for instance, has a funding Board known as the Florida Inland Navigational District which provides funds for the Inland waterway and ports. An active aid to navigation or a private aid for that matter might be eligible for funds.

F. Corporate Funds.
Shipping and transportation industries, power companies, insurance agencies etc.

G. Special events or activities on site.

H. Museum store sales and admissions.

THE RESTORATION OF LIGHTHOUSES

GETTING STARTED WITH FUNDRAISING & COMMUNITY SUPPORT

FUND RAISING PROJECTS:

THE TYBEE ISLAND EXPERIENCE:
The Tybee Island Historical Society has operated the Light Station since 1987.

ADMISSION FEES/GIFT SHOP SALES:
One Hundred and seventy thousand visitors a year climb the Tybee Lighthouse. Admission fees generate over $500,000 annually and gift shop sales generate over $500,000 a year.

SPECIAL EVENTS HELD AT LIGHT STATION:
With a year round population of only 3,500 residents, it is difficult for locals to provide the necessary funds for operation and restoration of the light station. **Out Back Steak House**, a national chain located in Savannah co-sponsors the annual "Tybee Days" celebration. **Out Back Steak House** donated and prepared 700 steak dinners for the event which also included live music from local groups, historic re-enactors depicting 400 years of Tybee history, and art and historic exhibits. Monies raised during this event ranged from $8,000.00 to $28,000.00.

SPECIAL FUND RAISING PROJECTS:
A special "Honorary Lighthouse Keeper donor plaque placed at the base of the Lighthouse has generated over $50,000.00. Engraved bricks installed in new walkways have generated over $60,000.00

CITY FUNDS:
The City of Tybee Island is a supporter of the Historic Light Station along with the Tybee Island Historical Society. Because tourism is a major economic factor in the health of the local business community the city contributes $25,000.00 a year for operational, advertising and maintenance of the light station.

COUNTY FUNDS:
Chatham County has pledged $350,000.00 in 1% sales tax monies for the light station restoration project.

STATE FUNDS:
Georgia has a very small state preservation budget. There is an annual statewide budget of a little over $250,000.00, so preservation grants are very small amounts and are very competitive. By developing strong and concise communication lines with the legislative delegation, the Tybee Island Historical Society has received $180,000.00 in legislative appropriations as compared to about $20,000.00 in State preservation funds.

FEDERAL FUNDS:
The Tybee Island Light Station restoration project has received over $1 million in federal Department of Transportation I.S.T.E.A. funds. These funds are awarded to state department of transportation agencies based on the amount of gasoline tax generated by each state. A percent of the funds are set aside to enhance historic transportation structures, build rails to trails paths, or beautify highway easements.

NATIONAL ORGANIZATIONAL SUPPORT:
Harbour Lights Collector Society has donated over $65,000.00 to the Tybee Light Station project.

THE ST. Augustine LIGHTHOUSE MUSEUM:
Operated by the Junior League of St. Augustine since 1980, and located in a community of only 11,000, several different events are held each year to raise funds on a local level.

ADMISSION AND GIFT SHOP SALES:
Over 150,000 people visit the St. Augustine lighthouse. Revenue each year from admission fees and gift shop sales exceed $1 million.

PROGRESSIVE DINNER:
This annual event raised over $20,000.00. The League appointed sub-committees responsible for each facet of the dinner from donations of food, beverages, money decorations, cocktails, and dinner homes. League members would collect all donations, prepare, and serve meals.

BARELY BLEMISHED SALE:
Also an annual event, this flea market type sale at the lighthouse raised $2,000 to $4,000 each year. League members and friends donated items of every description for sale. Local furniture businesses were also approached for donations.

TWILIGHT LIGHTHOUSE RUN:
This event held each year raises $12, 000,000. Local businesses sponsor the race to offset cost to the League. Over 400 hundred runners enter this event. Many advertising cost are provided by the County T.D.C. as participants stay for several days and T.D.C. funds are collected to promote the area for bed night events.

ROMANCE AND ROSES:
The League finds a local historic homeowner willing to donate use of house for event. A multi- course dinner is prepared and served by league members. Following dinner, the couples are taken for a horse drawn carriage ride, which is donated by a local provider. Couples arrive to and are driven from dinner in donated limo. Event raises around $2,000.

LIGHTHOUSE"COMMUNITY DAY":
This annual event brings over 5,000 visitors to the lighthouse for live local music, art displays, food, tours, and living history. Funds are generated through food and beverage sales and gift items. Over $8,000 a year is raised.

SPECIAL FUNDRAISING PROJECTS:
The historic brick wall which once surrounded the light station was reconstructed with engraved donor bricks. Brick piers, and iron gates were also sponsored. Over $60,000.00 was raised.

COUNTY TOURIST DEVELOPMENT COUNCIL FUNDS:
Chartered to provide advertising dollars to promote the county, the T.D.C. has a grant program to provide funds to local non-profits for special events, and advertising. The Lighthouse project was funded $15,000 annually.

STATE FUNDS:
Florida's annual statewide historic preservation budget is $10 million dollars. The St. Augustine project received over $1.2 million in funds for the Head Keeper's dwelling and lighthouse. Another funding category is provided for museum exhibits and operation. Over $200,000 was provided through that source. All funds are required to have a match which may be cash, donated materials, or in kind services.

NAVIGATIONAL FUNDS:
Because the St. Augustine Lighthouse is an active aid to navigation, there were funding agencies such as the local Port and Waterway Commission and the State Florida Inland Waterway District which funded the lighthouse for $40,000 and $175,000.00

THE KEY WEST EXPERIENCE:

Operated by the Key West Art and Historical Society since 1969, the Key West Lighthouse draws over 160,000 visitors a year.

ADMISSION FEES AND GIFT SHOP SALES:
Over $800,000 in revenue is generated each year.

SPECIAL FUNDRAISING EVENTS:

LIGHTHOUSE ART CHECK COMPETITION:
Sponsored by a local bank who offered cash prizes for winners, checks depicting local artwork of lighthouse were also sold by bank with proceeds going to restoration project. About $3,000 was raised.

LIGHTHOUSE DRINK CONTEST:
Local bars sponsored a contest in which their bartenders developed a special lighthouse cocktail. A fee was charged for patrons to judge the best drink. Over $2,000 was raised.

"HAVE A BITE AND SAVE THE LIGHT" EVENT:
A good old fashion cook out with local live entertainment and gift sales. About $2,000 was raised. A special Lighthouse logo was donated by local graphic artist was used on "T" shirts, Christmas tree ornaments, and posters. Over $5,000 was raised.

SPECIAL DONOR PLAQUE:
Donors who pledged $300.00 or more were listed on a special bronze plaque at the entrance to the light station. Over $10,000.00 was raised.

COUNTY TOURIST DEVELOPMENT TAX FUNDS:
Though slow to accept the advertising value of spending T.D.C. funds on "Bricks and Mortar projects, the Tourist Council eventually contributed over $1 million dollars to the Light Station project. National coverage of the project on CNN and networks as well as AP wire Service articles proved to be advertising dollars well spent.

STATE GRANTS:
Over $250,000 in historic preservation funds were awarded to the Key West project on the state level.

FEDERAL FUNDS:
Over $40,000 in National Lighthouse Bicentennial Funds were awarded to the Key West project.

Many of these fundraising opportunities were possible due to the involvement of non-profit volunteer based partnerships. The role of government, private, and public involvement creates more flexibility than single efforts alone. The benefits of varied partnerships have already been established at the Point Pinos Lighthouse. Most of the exhibits, interpretation, and day to day operation and staffing are already provided in exceptional and exemplary fashion by the dedicated involvement of groups such as the Pacific Grove Museum of Natural History, The Central Coast LightKeepers Association,the Questers and the potentially beneficial role played by the Heritage Society of Pacific Grove.

METHODOLOGY

POINT PINOS LIGHTHOUSE

PRESERVATION PLAN

EXPLANATION OF QUALITATIVE CONDITION

RATING GUIDELINES & MAINTENANCE

DEFICIENCY PRIORITY RATING:

The following Qualitative Condition Rating Guideline (**QCR**) and Maintenance Deficiency Priority Ratings (**MDPR**) were used in the assessment survey of the Little Cumberland Island Lighthouse. The Rating definitions are as follows:

A. **Qualitative Condition Rating Guidelines:**

*A rating of **GOOD** indicates that (a) routine maintenance should be sufficient to maintain the current condition; and/or (b) cyclic maintenance or a repair and re-habilitation project is not required to correct deficiencies.

*A rating of **FAIR** indicates that the feature generally provides an adequate level service of operations, but the feature needs more than routine maintenance. A **FAIR** rating also indicates that cyclic maintenance or repair/rehabilitation work may be necessary at some future date.

*A rating of **POOR** indicates that the feature is in need of immediate maintenance. A **POOR** rating also indicates that: (a) routine maintenance is needed at a much higher level of effort to meet significant safety and legal requirements; (b) cyclic maintenance should be scheduled for the current year or A.S.A.P.; and /or (c) A repair and rehabilitation project should be requested, consistent with the Secretary of the Interior Standards for the Treatment of Historic Properties.

B. **Maintenance Deficiency Priority Ratings:**

***MINOR:**

* Standard preventive maintenance practices and preservation methods have not been followed:

* There is a reduced life expectancy of affected or related materials and/or systems; or

* There is a condition with a long- term impact within 3-5 years and beyond.

***SERIOUS:**

* There is a deterioration which if not corrected within 1-3 years, will result in the failure of the feature; or

* A threat to the health and /or safety of the user may occur within 1-3 years if the deterioration is not corrected; or

* There is deterioration of adjacent or related materials and /or system as a result of the feature's deficiency.

* **CRITICAL:**

* There is advanced deterioration which has resulted in the failure of the feature, or will result in the failure of the feature if not corrected in the immediate future; or there is accelerated deterioration of adjacent or related materials as a result of the feature's deficiency; or

* There is a threat to the health and /or safety to the user/visitor or

* There is a failure to meet a legal requirement or code.

METHODOLOGY

Point Pinos Lighthouse

Preservation Plan:

Explanation of Preservation Techniques of Treatment:

This section will attempt to identify the variety of appropriate Preservation Techniques of Treatment used on historic properties. Often more than one type of treatment is appropriate for a resource as complex as the Point Pinos Lighthouse. Planned phasing of a project due to cost and /or funding delays may also require that a combination of treatment techniques be used.

- **Protection:** Applying measures that will protect a resource from loss, deterioration, vandalism, or damage before, during, and after restoration and /or rehabilitation and/or adaptive re-use. An example of Protection would be installation of a security and or/fire suppression system, an application of protective coatings on exposed fabric until permanent restoration, rehabilitation or adaptive use treatment can be conducted, or a temporary protective covering over damaged roofs, or windows.

- **Stabilization:** Applying measures designed to establish or re-establish the structural stability of an unsafe, damaged or deteriorated resource prior to, during and after restoration and /or rehabilitation and or adaptive re-use. An example of stabilization would be bracing of support brackets, safety rails or decking.

- **Preservation:** Applying measures to sustain the existing form, integrity and historic material of a historic resource. Preservation can include the combination of Protection and Stabilization techniques as well as an ongoing preventive maintenance program. An example of Preservation would be to paint existing historic fabric with appropriate coatings.

METHODOLOGY

Rehabilitation: Returning a historic resource to a state of usefulness through repair which makes possible an efficient contemporary use while maintaining its character defining and/or significant features. An example of Rehabilitation would be the modification of spaces in the Point Pinos Lighthouse while it modifies the original function of the space it does so maintaining the historic fabric and/or character of the space.

- **Restoration:** Recovering the form, details, elements, features and fabric of a historic property in an accurate and documented manner to a "time specific" period of interpretation, by removing contemporary material or equipment of a later period and /or replacing missing material or material damaged beyond re-use, that is relevant to the period of interpretation . An example of Restoration would be the removal of the enclosed porch on the front of the Point Pinos Lighthouse in order to establish its physical and historic character/design to a time specific period (such as 1909).

- **Reconstruction:** Reproducing by new construction the exact form and detail of a structure or feature which no longer exists to a period of time prior to its destruction and /or loss based on accurate documentation. An example of reconstruction would be the building of the chicken coop or other structure which existed at a historic period of the lighthouse but has since been removed.

The Point Pinos Lighthouse project may in fact use most if not all of these Techniques and treatments However, given the large amount of historic fabric still in existence at the Lighthouse most treatment will be that of Protection, Preservation, Stabilization, and Rehabilitation. Reconstruction technique will be required only if and when it is decided to build the former buildings located at the Point Pinos Light Station that have been removed.

METHODOLOGY

Regardless, the following **Preservation** criteria, based on the Secretary of the Interior Standards for the Treatment of Historic Properties need to be adopted and adhered to .

1. A property shall be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a property shall be protected, and if necessary, stabilized until additional work may be undertaken.

2. The historic character of a property shall be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property shall be avoided.

3. Each property shall be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic material and features shall be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.

4. Changes which may have taken place in the course of time are evidence of the history and development of the resource. These changes **may** have acquired significance in their own right, and this significance should be recognized and respected.

5. Distinctive materials, stylistic features, finishes, construction techniques, or examples of skilled craftsmanship which characterize a resource should be treated with sensitivity.

METHODOLOGY

6. Deteriorated features **should be repaired rather than replaced.** In the event that replacement is necessary, the new material should match the material being replaced in composition, design, color, texture, and other visual qualities. Repair or replacement of missing features should be based on accurate duplication of features, substantiated by historical or physical evidence rather than on conjectural designs or the availability of different elements from other resources.

7. The surface cleaning of resources should be undertaken **with the gentlest means** possible. **Sandblasting and other cleaning methods that will damage the historic building material should not be used.**

8. All actions should seek to arrest or retard the deterioration of the resource while **maintaining its existing form, integrity and materials**.

We will address specific recommended techniques and treatment in the Specific Recommendations for Treatment Section of this report. As indicated in the General Recommendation Section basic steps must be taken before, during and after every form of treatment. The basic steps are to (A) Identify significant historic assets. (B) Protect and maintain what is already historically significant before it is damaged or deteriorated. (C) If a higher level of treatment is required such as repair, do so by reusing as much of the historic fabric as possible and replacing material/fabric damaged beyond repair with compatible material/fabric/products and techniques.

RECOMMENDATIONS FOR TREATMENT

GENERAL:

POINT PINOS LIGHTHOUSE

PRESERVATION PLAN

Preservation/Stabilization Recommendations:

These recommendations will be addressed in more specific detail later in this Preservation Plan. This component is merely a broad overview of recommended activity.

Prior to all work activity volunteers and other involved persons in the restoration /stabilization of the Lighthouse should undergo a basic preservation awareness training session to become familiar with The Secretary of the Interior Standards for the Treatment of Historic Properties. Training should include but not be limited to other aspects of appropriate preservation techniques. We highly recommend that each participant receive copies of the **Preservation Briefs** included with this Preservation Plan which are related to specific treatment of historic fabric similar to those found in the Point Pinos Lighthouse.

A broad overview of the methodology used throughout this Preservation Plan (if implemented), should be provided to all participants. Emphasis on the proper sequence of activity and an explanation as to why those steps must follow a specific sequence should also be a part of the training session. The project should be divided into specific and clearly designated roles and responsibilities with utilization of specialist in specific technical areas. For example, volunteers with experience and training in electrical, carpentry, painting trades should be assigned task related to that field with project chairmen heading up the scope of work. Morning briefings should take place to review work activities for the day. Each group should take time to review the work performed by other groups to be familiar with the inter-related characteristics of these types of projects.

RECOMMENDATIONS FOR TREATMENT

GENERAL:

The recommended priorities outlined in this Preservation Plan should be used to provide a systematic and consistent work plan and scope of work. Stabilization of the envelope to prevent additional damage from the elements will be given the highest priority in conjunction with the following steps. Items which are not essential to the structural integrity, weather-tightness of the lighthouse or needed for security and safety can be repaired and or replaced in later phases of this project.

The basic priorities are as follow:

Given the current and future economic crises confronting the State of California and the community of Pacific Grove there is a great need to develop workable partnerships within the volunteer community and the City which owns the historic light station property. Use of highly motivated, skilled and dedicated volunteers can and will greatly supplement limited City maintenance crews and budgets.

We highly recommend that a formal process of meetings between all interested groups take place as soon as possible and that a clearly understood and written MOU be established as a governing and guiding document in order to best utilize the resources of the community. Much of the scope of work following can be performed by volunteers working in conjunction and in unison with City Staff.

1. The Lantern Room level gallery damaged metal door should be secured to prevent any use until repairs are made. Note staff and volunteer access should be limited and use of safety harness and safety lines are highly recommended at all times. Specific repairs to metalwork in Lantern Room will be addressed in Immediate Section of Phased Work.

2. Repair leaking pipes under ground floor bathroom.

RECOMMENDATIONS FOR TREATMENT

GENERAL:

3. Inspect all interior and exterior areas for dampness and/or standing water Identify all possible openings, voids, and/or damaged surfaces which might collect moisture or direct it into adjoining areas or material. Check interior spaces to determine if moisture has collected. Visible indicators might be evident mold, mildew, spalling or cracking paint, rust stains and/ or bleeding, and musty smells, evident dampness on surfaces. Provide appropriate means of venting interior spaces of lighthouse to reduce moisture collection and subsequent damage. Measure moisture levels monthly.

4. Conduct paint analysis on all masonry, metal, and wood prior to cleaning to determine historic colors. Provide for containment system to contain, collect and dispose of loose hazardous coatings.(Existing interior and exterior coatings have a high concentration of lead and should be removed by a qualified certified abatement specialist during restoration process in compliance with Federal and State of California requirements. Extreme care will have to be exercised during the entire project to prevent any paint residue from endangering participants or contaminating surrounding ground/ o r waters.) Gently scrape all loose paint from surfaces, contain collect, and dispose of properly. Sand to smooth surface all exposed wood surfaces. Prime and repaint based on historic colors.

5. Have staff/ volunteers remove all debris from gutters/downspouts to insure they function as intended.

6. Have staff /volunteers remove build up of earth and growth of vegetation which currently and /or potentially make contact with exterior walls of lighthouse.* proper protective mask and clothing should be worn when raking earth away from building. Recommend that earth be wet prior to ranking to prevent Lead contaminated dust from becoming airborne. Earth is to be spread in same area in a manner that does not transfer contaminated soil to other others.

RECOMMENDATIONS FOR TREATMENT

GENERAL:

7. Repair all wooden window frames, sashes, and trim. Replace window glazing where needed. Sand, prime, recoat based on historic colors. Contain and collect paint particles and dispose of according to Federal and State of California Law

8. Determine availability of funds and establish a priority rating for a phased scope of work such as:

Phase I:-Next available budget cycle. (Not to exceed 6 months delay).

Repair, restore, and re-install damaged elements of the lantern room including all safety rail systems and cast iron lantern room wall panels. Note: This area represents the greatest concern of probable accelerated deterioration and damage of **bronze** astragals, for storm panes, and lantern room door and needs to be addressed immediately. There is tremendous stress being exerted on **bronze** astragals and against glass storm panes which will cause damage to historic fabric increasing repair cost and potential damage to glass storm panes which will increase water entry into Lantern Room and into support cylinder of lighthouse.

General cleaning of rust, rust blisters and peeling metal coatings could be performed by qualified **volunteers**. Some use of metal fillers to repair surface damage could also be performed by **volunteers**. These steps would provide immediate relief of stress on historic and glass fabric until more complex repairs and replacement by qualified contractors can take place.

RECOMMENDATIONS FOR TREATMENT

GENERAL:

Repair exterior masonry walls of cylinder supporting Lantern Room. Conduct investigation of cracks in plaster in support cylinder area of lighthouse (may require some selective removal of stucco. Note: Second greatest area of concern. This work requires specialized professional consultants.

Rake earth that has accumulated around base of living quarters away from building. Remove dirt and debris from all rain gutters and downspouts.

Repair all window sashes, framing, casing, jambs, headers, and sills in lighthouse. Document design of historic windows and consider restoration of existing windows as opposed to reconstruction of windows from earlier time period Sand, repair prime and repaint all lap siding as needed. (This work could be performed by qualified volunteers wearing proper protective mask and garments. All paint chips and residue must be contained, collected and disposed of according to Federal and State of California Law.

Phase II: (Following budget cycle- within two years)

Make repairs to structural brickwork along rear roof- line. Repair of all exterior masonry fabric including brick chimneys. Recoat based on historic documentation.

Phase III:

Repair cedar- shake shingle roof material/Repair Fuel Storage House roof system.

Phase IV :(Third budget cycle).

Repair wood floor of front entrance porch.

RECOMMENDATIONS FOR TREATMENT

GENERAL:

Phase V :(Fourth budget cycle)

Clean, repair, and recoat of all interior metal- work.

Clean, repair and recoat of all interior masonry work.

Phase VI :(Future –when budget permits)

Reconstruct historic outbuildings no longer on site for interpretation and use as entrance and museum store facilities.

Figure 1: Two of several historic support structures which were removed and could be reconstructed to provide entranceand retail operations.

*Construct new ADA compliant public walkways to direct traffic into and out of lighthouse and grounds. While this scope of work is vastly important due to public safety –access concerns a more comprehensive site plan needs to be developed in order that public traffic patterns be documented, that future out building plans be decided upon and incorporated into site plan. Landscaping plans should also be an important part of site plan.

CONDITIONS SURVEY

EXTERIOR-GENERAL CONDITIONS

Figure 2-LANTERN ROOM

LANTERN ROOM AND SUPPORT CYLINDER:

Following the 1906 California Earthquake, the Point Pinos Lighthouse Lantern brick support cylinder was replaced in 1907 with a poured concrete structure. A stucco finish was applied over the concrete to protect the porous concrete from exposure in a hostile coastal environment. To help protect the stucco coat, the exterior surface was also provided with a whitewash coating to help seal the porous stucco from rain as well as reduce the abrasive exposure to wind- blown sand. The white wash finish coat would also serve as the "day mark" color used to distinguish the Point Pinos Lighthouse from others along the California coast. It would have been an ongoing maintenance responsibility of Keepers to re-paint the exterior of the lighthouse on an "as needed basis". This responsibility ceased to be provided once keepers and Coast Guard personnel were no longer stationed at the Point Pinos Lighthouse and their daily on site presence no longer provided preventive maintenance on the lighthouse. Extensive repairs have been made to the original historic stucco coat and the exterior has received a coat of protective paint during an extensive repair project in the 1990s. (?)

CONDITIONS SURVEY

EXTERIOR-GENERAL CONDITIONS

Figure 3: Cracks in stucco.

EXTERIOR STUCCO-PROTECTIVE COATING

Major cracks and damage to stucco on the Lantern Room support cylinder exterior was observed during our April site visit. Note: The depth and extent of cracks indicate stress and movement that may have produced structural damage to the concrete on the exterior of the cylinder. A safe work platform must be provided to better inspect and repair these areas. The degree of damage provides a broad avenue for water entry into interior areas of the lighthouse with resultant damage to historic fabric. Some temporary repairs should be conducted to seal off large cracks until major repairs can occur. Given the unsafe conditions extreme caution and proper safety equipment must be used while making those repairs. Caulking material should be elastomeric and removal for future repairs.

Adverse effects of exterior cracks on interior historic fabric.

Figure3: Evidence of moisture damage from exterior cracks in stucco.

There has been a resultant moisture entry into the porous stucco coat which has permeated into the interior of the lighthouse with resultant damage to the historic fabric, including plaster. Whether due to improper application or moisture damage, there is widespread failure of the adhesion of the stucco coat to the exterior concrete which produces a hollow sound when we tested the circumference of the exterior lighthouse cylinder. There are also numerous hairline cracks or separations throughout the exterior surfaces of the stucco coat which has provided additional moisture entry into the hollows between the stucco coat and the exterior concrete surface. The extent of the damage ranges from hairline cracks to actual failure of sections of stucco coats with resultant large openings into the stucco coat and higher levels of moisture entrapment and damage.

EXTERIOR STUCCO-PROTECTIVE COATING

Figure 4: Example of failed stucco coat with resultant loss of protection and additional moisture entry behind stucco coat.

Figure 5: Example of failed stucco coat with resultant loss of protection and additional moisture entry behind stucco coat. Crack allows avenue for water behind metal flashing and into interior walls.

CONDITIONS SURVEY

EXTERIOR-GENERAL CONDITIONS

Figure 6: Window system east -rear.

Figure 7: Window system west -front.

WINDOWS- LIVING QUARTERS: The overall condition of the wood window systems have been rated GOOD to POOR. Loss of protective paint coatings and window pane glazing has resulted in extensive damge to many window sashes, aprons, sills and trim. Documentation of historic time periods should be established to determine which style /design of windows will be used in interpreting the Point Pinos Lighthouse living quarters. It is our recommendation that no change in window design take place as existing windows represent a significant period of interpretation and contributes to a diversity of window design which adds interest to the historic character of the living quarters. Window repair has been ranked as one of the Immediate phases of the scope of work. Qualified volunteers could conduct the repair of windows to reduce the budget cost to the City of Pacific Grove as long as they wear proper protective mask and garments and contain, collect and dispose of paint debris according to Federal and State of California law.

Figure 8: Example Dormer window

Figure 9: Enclosed basement window.

Both enclosed basement windows located on the west elevation should be restored to improve historic character and provide light in basement areas.

Figure 10: Example of 6/6 double hung **sash** windows- rear attachment.

The condition or existence of window weights, ropes/chains/ or pulley wheels was not determined during this inspection. Restoration of window systems to a functional condition should be determined based on budget constraints as well as security consideration.

Figure 11& 12: Left and right example of 1st and 2nd floor 1/1 double hung sash window

Figure 13: Front porch(1906) and "Watch Room" windows (1930s').

CONDITIONS SURVEY

Figure 14 & 15: Example of damage to window trim and window - sill.

Figure 16: Example of damaged window- pane glazing has loss its integrity and has separated from wooden muntins. Gaps allow moisture between glass and wood fabric.

EXTERIOR-GENERAL CONDITIONS

Figure 17: SOUTH-SIDE ELEVATION

LAPSIDING: The overall condition of the wood lap siding is GOOD to FAIR. The condition of the wood siding is still sound though there is a thinning and loss of protective coatings. Steel nail fasteners have failed in numerous areas and there is rust staining associated with loss of protective coatings. Previous use of metal connectors to attach other equipment has also produced holes for water entry behind lap siding as well as additional rust stains. All obsolete connectors should be removed. All holes should be filled with appropriate wood filler. Siding should be hand sanded, primed, and re-painted in order to prolong life span of siding. Accumulated earth should be immediately raked away from contact with building and lap siding. This area would be excellent use of qualified volunteers to make repairs to offset budget cost to City of Pacific Grove.

Figure 18: Accumulated dirt and vegetation should be raked away from contact with wood ASAP.

CONDITIONS SURVEY

Figure 19: NORTH-SIDE ELEVATION

EXTRANOIUS ATTACHMENTS/FASTENERS.

There are numerous metal attachments/fasteners on the exterior of the living quarters of the lighthouse. All obsolete equipment, water piping, stovepipes etc should be removed and holes filled with appropriate material. Surfaces should be sanded and re-painted ASAP. This activity could be conducted by qualified volunteers to offset budget cost to the City of Pacific Grove.

Figure 20 & 21: Obsolete equipment and attachments should be removed and historic fabric repaired.

EXTERIOR-GENERAL CONDITIONS

Figure 22: EAST-REAR ENTRANCE

ROOF SYSTEM: The roof material used on the living quarters of the lighthouse is wooden cedar shake shingles. The overall condition of the cedar shake shingle roof system is rated FAIR to POOR. The shakes are in the later period of their life span and have resultant cupping, cracking, separation, fungus contamination, and loss of nail fasteners. There are several areas with ridge caps missing entirely-potentially allowing moisture under the shakes and into the attic area of the lighthouse. There will be a need to replace the cedar shakes in the near future but repairs to damaged areas, including ridge caps should provide at least two more years of service. Staff/volunteers should inspect attic area on a regular basis following a rain event to monitor potential shake failure and leaks.

Figure 23: Roof gutters and downspouts should be cleaned ASAP.

CONDITIONS SURVEY

EXTERIOR-GENERAL CONDITIONS

Figure 24: ROOF SYSTEM-REAR ELEVATION

Figure 25: ROOF SYSTEM FRONT ELEVATION

CONDITIONS SURVEY

Figure 26 & 27: North and South chimney systems

CHIMNEYS: The end gable chimneys are constructed of fired red brick with a protective stucco coating. They are topped by clay pipe flues which have wire screening to prevent bird entry. There is a metal flashing at the base of the chimneys as they meet the cedar shake shingle roof. (Flashing material appears to be metal other than copper which would have been used historically and which has a longer life span in hostile coastal environments.)The overall condition of both brick chimney systems is rated POOR. Most of the protective paint coating has failed and there is widespread loss of the protective stucco as well. We noted extensive loss of mortar joints on both chimney systems which could result in loss of structural integrity, especially during a high wind event. The repair to the chimney systems should be performed by qualified contractors.

Figure 28: Condition of corbel bricks.

BRICK WORK ON ROOF SUPPORT CORBEL –REAR ELEVATION OF LIVING QUARTERS.

There is extensive damage to the brick corbel which helps support the roof system on the rear elevation of the living quarters. The overall condition of the brickwork on the corbel is rated POOR.

Figure 29 & 30: Examples of type of damage to roof brick corbel.

The repair of the brick corbels should be performed by qualified contractors.

EXTERIOR-GENERAL CONDITIONS

Figure 31: WEST-FRONT –ENTRANCE

STONE WORK: Overall condition of the stone- work of the Point Pinos Lighthouse is GOOD with no apparent structural damage or serious surface deficiencies. Numerous layers of coating systems prevent more extensive investigation. There are rust stains and limited damage related to the use of steel fasteners which attached conduit or other apparatus to the exterior of the lighthouse. These metal fasteners should be carefully removed to prevent additional damage or staining. It was noted that in basement area of lighthouse there were signs of moisture penetration evidenced by yellow staining and damage to the paint coating ranging from peeling to absence of coating.

It is believed that in the near future some additional investigation into the source of moisture entry should be conducted by selected digging along the base of the stonework corresponding to the damage on the interior.

Figure 32: FOUNDATION

CONDITIONS SURVEY

EXTERIOR-GENERAL CONDITIONS

Figure33 : HISTORIC FUEL STORAGE BUILDING

Fuel Storage Building: The overall condition of the Fuel Storage Building is rated as GOOD to FAIR. The building is of brick construction with a protective stucco exterior coating. The roof system is a wood truss with wide plank roof decking covered by. Fuel Storage Buildings under the care of the U.S. Lighthouse Service and well into the management of the United States Coast Guard, often historically were covered with a metal standing seam roof material usually painted red to indicate the storage of flammable materials. There are several structural cracks along the North and South sides of the building. The iron door is supported by two strap hinges. Both hinges are in a state of advanced metal jacking due to the exfoliation of the metal. There is wood rot on the rafter tails of the roof system and evidence of rot in some of the roof deck planks. Several sections of deck planks have been replaced with newer material.

Figure 34: NAVIGATIONAL BUOY

NAVIGATIONAL BUOY: The overall condition of the buoy is ranked as POOR. There is widespread loss of protective coatings with resultant oxidation, staining, blistering and exfoliation of the metal surfaces. There are several dents in the Buoy. Repairs can be conducted by volunteers or staff under a controlled environment with protective mask and outer safety wear. Proper encapsulation of Buoy should be installed prior to blasting. All paint debris should be contained, collected, and disposed of according to federal and State of California Law. Buoy should be sand blasted to clean metal of all coatings. Buoy should be repainted based on historic colors and markings.

CONDITIONS SURVEY

EXTERIOR-GENERAL CONDITIONS

Figure 45-36-37-38: Misc. Monuments

GROUND MEMORIALS: There are numerous memorial stones located on the grounds, serving a variety of dedications. A comprehensive landscape /site design should be conducted in order to determine the best location and use of the existing and future monuments.

CONDITIONS SURVEY

EXTERIOR-GENERAL CONDITIONS

Figure 39: WALKWAYS

CONCRETE WALKWAYS: The overall condition of the concrete walkways is rated as POOR to FAIR. It is recommended that a new walkway plan be incorporated within the overall Site Design Plan to provide for a more user friendly and ADA complaint walkway system. New walkways should be constructed wide enough to accommodate two way traffic including wheel chair traffic. Visitor traffic patterns should be monitored to help determine the most effective route to guide visitors to the lighthouse, fuel storage building, and grounds. Future construction of missing out buildings should also be factored into the Site Plan Design and Walkway route.

CONDITIONS SURVEY

EXTERIOR-GENERAL CONDITIONS

Figure 40: Historic Fog Horn building.

The Fog Horn Building was constructed to provide Fog warnings in this especially treacherous area of California coastline. There are numerous examples of fatal and highly destructive loss of shipping in the waters covered by the operation of a fog signal operated by the staff of the Point Pinos Light Station. This particular structure was built in the 1940s' out of poured concrete and concrete block with a concrete slab roof. Lying nearby is a iron/steel frame which is believed to be the housing for the historic fog horn apparatus. This system should be researched to determine its historic significance and removed for safe keeping accordingly.

Figure: Fog Horn frame?

CONDITIONS SURVEY

INTERIOR-GENERAL CONDITIONS

Figure 5: Point Pinos Lantern Room & Historic Optic.

The Point Pinos lantern room houses a historic 3rd Order Henry Le Paute Fresnel Lens which still serves as an active Aid to Navigation operated by the United States Coast Guard. The brass and glass lens system is supported by a historic lens pedestal. The historic optic is surrounded and protected by a copper dome with iron canopy topped by a bronze vent ball. The framing is iron-crossed braced by an iron "spider". Iron stiles braced by bronze mullions which also serve as condensation collectors, secure the glass storm panes. There are bronze vents at the top of the iron walls. Iron flat plate walls attached to the steel stiles and bronze mullions, a steel deck platform. There is rust staining, rust scale, and metal exfoliation in numerous areas of the lantern room, especially the lantern canopy, walls, and doors. The bronze air vents are also showing signs of advanced deterioration. All damage should be corrected under the IMMEDIATE PHASE of the Preservation Plan. The Overall rating of the Lantern Room interior is GOOD to POOR.

CONDITIONS SURVEY

INTERIOR-GENERAL CONDITIONS

Figure 6 : Interior access to Lantern Room.

The overall quality of care given the Point Pinos Lighthouse interior has to be considered excellent. With few exceptions the conditions were rated GOOD. There are very effective access control measures currently in place that provide a high level of protection to sensitive areas of the lighthouse.

CONDITIONS SURVEY

INTERIOR-GENERAL CONDITIONS

It is unknown if any “Carrying Capacity” studies have been conducted or considered. The current low volume of visitation does not have an obvious detremental effect on the historic fabric on the interior of the lighthouse. Staff and volunteers should look for tell-tale signs of wear and tear on floors, stairs, doorframes and other high contact areas , to determine if additional maintenance should be conducted to adequately protect historic fabric and safeguard visitors.

There are two specific areas of operation which must be pointed out as not only excellent but exemplary. Dedicated individuals and groups such as the Heritage Society of Pacific Grove and the Central Coast Lighthouse Keepers provide ongoing and informative volunteers to conduct interpretation and information services for visitors. They also provide merchandize and personnel to operate a very small retail operation on site. Perhaps the most outstanding achievements have been those of the Questers which have provided incredible exhibit and interpretive service to the Point Pinos Lighthouse for decades. With increased maintenance service provided by groups such as the Heritage Society of Pacific Grove, the outstanding operation and quality of visitor's services will be complemented with superior preventive and preservation maintenance while offsetting cost to the City of Pacific Grove.

CONDITIONS SURVEY

INTERIOR-GENERAL CONDITIONS

The overall quality of exhibits and interpretive material is excellent. When and where possible display panels should be installed which resist public contact damage. Lighting is inconsistent with the historic character in the kitchen area and should be re-designed for more effective and appropriate impact on the historic kitchen character. The existing floors are a modern veneer overlay which provides a safe and attractive floor covering but is not historic to the kitchen and somewhat distorts the understanding and interpretation of the historic character and materials experienced by visitors.

CONDITIONS SURVEY

INTERIOR-GENERAL CONDITIONS

The small crawl space above the kitchen and bathroom area was inspected for indications of roof failure and leaks. Structural integrity and possible wood rot and insect damage were also concerns. No significant damage or any evidence of recent water entry was observed. The wiring system was noted to be in need of inspection and updating to provide adequate and safe electrical service to the lighthouse.

CONDITIONS SURVEY

INTERIOR-GENERAL CONDITIONS

The same quality of exhibits, interpretation, and cleanliness extends to the basement area as well. There are no deficiencies to note in the public access areas. Lighting though not historically appropriate is recessed with the floor joist and provides a high level of lighting without impacting the historic experience to the visitor.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure : LANTERN ROOM

The Lantern Room of the Point Pinos Lighthouse is composed of a mixture of metals which include cast iron , wrought iron, bronze, brass, steel and recent (within ten years) use of aluminum flashing along the exterior base of the wall of the Lantern Room and deck plates. The Lantern Room is enclosed by a bronze dome or cupola which is topped by a bronze vent ball designed to vent heat, soot, smoke, and humidity from the interior of the Lantern Room. This device was especially important during the period fossil fuels were used as a means of lighting the lamps which illuminated the historic beacon. There is a bronze lightning rod atop the vent ball. It is not known at the time of this report as to whether the lightning rod is properly grounded and functions as designed.

Figure 7 : Lightning rod and vent ball.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure: Gutter and downspout system.

The canopy is outlined with a highly decorative and unique scroll and lion's head gutter and downspout system to direct rainwater runoff away from the dome of the lighthouse. The drain system should be checked for proper function.

Figure: Bronze Lion Head gutter/downspout

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure : Bronze astragals securing storm panes.

The Lantern Room storm panes are held in place against the steel stiles and mullions by bronze astragals. There are stamped numbers on each astragal directing proper placement in numerical sequence around the lighthouse lantern and along the storm panes. There is a system of bronze hand safety grips which are bolted to the outer edge of the bronze storm pane astragals (batten strips). All fasteners are bronze and historically were metric. Due to metal fatigue they often break when being removed and once snapped off the remaining bolt will need to be tapped out. Replacement bolts must match originals in size, shape, and material. It appears that the fasteners used to attach the wall astragals are newer and were possibly installed during the period that the aluminum flashing was also installed.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure: Bronze vent system.

There is a system of bronze air vents which are located along the bottom of the storm panes and atop the iron Lantern Room parapet walls. This vent system worked in conjunction with the vent ball to provide air exchange within the Lantern Room. There are bronze screens in the vents to prevent insect entry into the Lantern room which would create problems during the nighttime use of the lamps or lights provided to illuminate the lens/optic.

Figure : Interior vent system.

There is also a condensation collection system built into the interior wall of the Lantern Room just below the storm panes. As ambient temperatures changed moisture condensation would form on interior storm pane surfaces which could be collected in narrow basins or troughs just below the glass storm panes. These collectors are made of bronze in order to withstand the high chloride content of the moisture. Keepers would drain the basins as part of their daily maintenance schedules.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure: Iron Lantern Room Wall & bronze astragals.

The Lantern Room is made up of a series of iron plates which enclose the bottom of the Lantern Room and which are connected to the Lantern Room frame by bronze astragals bolted through the plates and threaded into the receiving holes in the inner frame. The black exterior coating system which is part of the Point Pinos "Day Mark" is in widespread failure. There is pervasive damage to both the iron wall panels and more importantly to the softer bronze astragals due to "metal jacking" created by the exfoliation of the iron plates. It appears that there is a process of galvanic corrosion or "catalytic reaction" of the two dissimilar metals taking place which when combined with salt air/water creates the catalyst to produce the corrosive effect. The condition is most pronounced on the western (seaward) sides of the exterior of the lantern. The degree of damage to the metal plates range from surface oxidation, to rust scale, to rust blisters, to exfoliation and "jacking" to loss of significant surface metal.

Figure : Stress effect on bronze astragals.

The “Jacking” process has produced enormous stress on the softer bronze astragals resulting in bending of the astragal bar, a wider gap between the astragal bar and the iron wall plate and a greater avenue for moisture to penetrate behind and between metal surfaces. This increased volume of moisture entry accelerates the galvanic corrosion process and will add greatly to the overall repair and replacement of historic fabric if left unchecked.

Figure: Base of Lantern Room wall as it connects to deck plate.

The extreme degree of adverse effect of the catalytic reaction of the use of dissimilar metals is pronounced separation of metal connections and waterproofing as well as extensive damage to both historic and new materials. It was noted during our site visit that recent repairs to the lantern and lantern deck area included the use of modern materials (aluminum) as flashing to waterproof the gaps between the iron lantern wall and the iron gallery deck. There is pronounced "jacking" of the softer aluminum flashing as well as an extensive "bled off" of what appears to be aluminum oxide. The volume of white powder is so great it has produced extensive and widespread staining of all areas adjoining or near the placement of the aluminum and caulking material. Budget permitting it might be advisable to remove the aluminum flashing and replace it with an appropriate fabric.

Figure: Damage to deck plate and aluminum flashing.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure : Iron Lantern Room Door.

The door enclosing the exit/egress to and from the Lantern Room Gallery deck is flat iron plate with attached re-enforcement bars. The hinges which support the door and the hardware which secure the door are original and historic to the Point Pinos Lighthouse. There is widespread coating failure with resultant metal oxidation, scaling, blistering and exfoliation. “Rust jacking” is creating enormous stress on the hinges, and doorframe which currently causes the door to bind when in use. Bronze astragals which secure the doorframe are in advance state of movement due to the stress. This condition poses great risk to the historic fabric and ultimate future loss of the historic door and related framework. Immediate steps should be taken to stabilize the door and adjoining metal fabric.

Figure: Gallery Deck safety rail and post system.

The Lantern is surrounded by an iron plate gallery deck which is enclosed by safety rail system made up of an iron rod and flat bar top and bottom rail which secures the round rail rods. The railing system is connected to the deck and gallery bracket support system by wrought iron posts which are threaded on each end to receive the ball cap on top and to thread through the deck plate and into the support bracket on the underside of the gallery deck.

The gallery deck is supported by iron brackets arms which extend under the gallery plates at the ends of the iron deck plate which provide strength and connection to both edges of the adjoining deck plates. The bracket arms are bolted through the cast iron collar which encircles the top of the brick/stucco support cylinder. There are numerous support brackets which have bolt nuts missing from heads. These nuts help secure the railing post above.

Figure: Gallery deck support brackets.

Figure Gallery deck plate-adjoining plate seams.

The gallery deck plates are supported by the bracket system underneath. The brackets are installed under each of the sections of deck plates that meet the adjoining plate. Historically, gaps were filled with soft lead seals to prevent water entry between deck plates. Currently the material used to fill those gaps is in an advance state of deterioration and failure. Thick oxidation staining has contaminated deck plates surfaces and undersides, including metal collar and bracket support systems under the deck plate. Counter-sunk bolts should be sealed as well. These areas should be thoroughly cleaned and re-caulked prior to re-painting.

Figure 8: Textured deck plates. Note oxidation of surface.

Figure 9: Brick corbel serves as part of lantern room support system.

The entire lantern and lens system is supported by the 1906 concrete cylinder which extends from the Lantern Room to the basement floor. At the top edge of the cylinder is a concrete corbel which extends out to offset the weight of the lantern deck. At the bottom of the roof edge of the cylinder is a lead flashing system to protect from rainwater entry under the cedar shake shingle roof.

Figure Final/first section of support cylinder located in basement.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure : LANTERN ROOM SUPPORT CYLINDER

There are extensive surface cracks on the support cylinder which are most evident on the north –east elevation. The source and cause or extent of these cracks in the stucco is not known at the time of this report. The width of the cracks range from hairline to ¼" with significant separation of stucco from the wall. This separation indicates the cracks may in fact be structural in degree. Further selective investigation by qualified architect/structural engineer is highly recommended. Until full- scale repair work can take place it is recommended that careful application of an approved elastomeric caulking material be used to seal cracks from water entry. The application must be performed in a manner which can be easily reversed. There is a corresponding adverse effect of the exterior cracks and related moisture entry on the interior plaster wall of the support cylinder.

Figure :Moisture stains on inside of lantern support cylinder/stairwell.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Any activity which affects the operation of the official aid to navigation must be approved by the United States Coast Guard. Safe guards must be incorporated to protect sensitive equipment prior to work activity beginning.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure : Build up of earth and vegetation against wood fabric.

As part of a more focused preventive maintenance program the City of Pacific Grove should enlist the use of volunteers to conduct work projects which decrease damage to historic fabric, improve overall appearance of site, and decrease budget cost to the City. Rake the accumulated earth away from wood and remove growth of related vegetation which comes into contact with historic fabric will prevent damage due to moisture retention and or insect infestation. Dry vegetation in contact with wood fabric could also be a source of fuel in an accidental fire occurrence. Volunteers could also sand, repair and repaint wood lap siding reducing need for City work crews. Note: Due to the presence of Lead Base paint contamination of soil protective mask and garments should be worn.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure: Gutters filled with debris.

The gutter system along the roofline on the living quarters is metal lined with bronze. There are lead soldered seams. There are several sections of the gutter and downspout system which are poorly connected. Some attachments to the roof have failed. The gutters are shallow and do not carry a large volume of water. Even the same amount of accumulated debris greatly restricts the effectiveness of the gutter system. Volunteers should be used to clean the gutter system and be recruited to check their function on a monthly basis as part of a preventive maintenance plan. Note: Extensive repair of all gutter and downspouts should be conducted as part of scope of work during replacement of cedar shake shingles.

Figure: Gutter system has numerous areas of damage related to failed fasteners.

Figures : downspout system.

The entire downspout system is rated as POOR and requires comprehensive repairs. Work should be performed a qualified contractors as this downspout design is historic to the building, is constructed of metal and wood and has delicate wood trim. Where possible the copper downspouts should be repaired rather than replaced. There is a section of downspout entirely missing on the front elevation of the lighthouse. Replacement downspouts should be of same material as existing and of equal quality of materials.

Figure 10: Window system front elevation.

There have been several modifications to the window system on the Point Pinos Lighthouse over its history. The existing windows reflect those numerous changes, including the large window incorporated into the front enclosed porch which was a later but nevertheless historic modification to the west elevation of the lighthouse. Currently 1/1 wood window sashes are in place on the front ground floor of the lighthouse living quarters. Photo documentation clearly indicated that in an earlier period 6/6 double sash windows were in use. It is our recommendation to continue to use all existing windows on the front elevation and to proceed with repairs immediately.

Figure 11: Photograph of earlier window design.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #1.1/1 DOUBLE HUNG SASH WINDOW WEST ELEVATION GOOD to FAIR.

Figure #2.WINDOW SYSTEM WEST ELEVATION GOOD to FAIR.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure#3 : FRONT ENTRANCE DOOR-GOOD.

Figure#4 : ENCLOSED BASEMENT WINDOW WEST ELEVATION-POOR.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure#5 : WATCH ROOM WINDOW-GOOD to FAIR.

Figure#6 : FRONT PORCH/ENTRANCE WINDOW-GOOD to FAIR.

The 1907 modification of the orginal design of the Point Pinos lighthouse front porch window system should be treated and preserved as historic. Very careful treatment of failed coating system, glazing and wood repair should be conducted by qualified staff or volunteers. Oxidation stains should be treated to reduce their damaging effect.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure#7 : FRONT PORCH-NORTH SIDE WINDOW-**FAIR.**

Figure #8: ENCLOSED BASEMENT WINDOW-NORTH-**POOR.**

Fenestration around historic windows should be repaired rather than replaced where possible. Enclosed basement windows should be restored based on documentation.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #9-WEST ELEVATION WINDOW-GOOD to FAIR.

Figure #10: WEST ELEVATION-WINDOW- FAIR to POOR.

Existing windows should be retained, repaired, and restored.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure#11: WINDOW SYSTEMS -EAST ELEVATION

Figure #12: The window system on the rear -east elevation has also been modified over the years.

One of the major changes affecting window design and modifications was the 1907 construction of the attached lean-to addition. The addition also underwent modifications over the years. Existing window systems should be retained and restored as a singular period of interpretation of the lighthouse would require removal of significant historic material and distort the historic changes to the lighthouse. 6/6 windows were also in place during earlier periods of the Point Pinos Lighthouse.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #13: EAST ELEVATION DORMER WINDOWS-FAIR to POOR.

Figure #14: DORMER WINDOW EAST ELEVATION-FAIR to POOR.

Paint analysis should be conducted to determine historic colors prior to removal of existing coating system. Screens in air exchange vents above dormer windows should be repaired as needed.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure#15 : EAST ELEVATION WINDOWS 6/6 double hung sash windows.-POOR.

Figure# 16 & 17: 6/6 DOUBLE HUNG SASH WINDOWS-POOR.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #18: EAST ELEVATION REAR DOOR-GOOD.

The existing rear door is not original to the attached lean-to addition located on the east elevation. The age of the two-panel door is of unknown. The six light door design provides the ability for visitors and staff entering or exiting the door to view opposing traffic. Note: mass of dry vegetation along side of lap siding and door stoop.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure#19: WINDOW SYSTEM-SOUTH ELEVATION

The circa 1900 lower window system on the south elevation reflects the same evolution as the other elevations. Vegetation growth obscures some of the detail of the earlier period captured in the photo below but clearly existing 6/6 windows in place today existed in the earlier photo. One major change is the rear door which was a solid four panel door with transom as opposed to the existing two panel six light door.

Figure#20: South elevation of Point Pinos Light.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #21: 6/6 DOUBLE HUNG WINDOW -REAR ATTACHMENT-POOR.

Figure#22: -SOUTH ELEVATION LOWER WINDOW

Figure#23 &#24: SOUTH ELEVATION-2nd FLOOR WINDOW-FAIR to POOR

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure#25: WINDOW SYSTEM NORTH ELEVATION

2ND FLOOR WINDOW **FAIR TO POOR.**

Figure #26 & 27:-ORIGINAL 6/6 DOUBLE HUNG SASH WINDOW-**FAIR** to **POOR.**

CONDITIONS SURVEY-EXTERIOR-SPECIFIC

Figure#28 : TYPICAL WINDOW CONDITION-POOR

Overall window condition is rated FAIR to POOR. There is widespread loss of protective coatings, wood deterioration, wood rot, damage to window mullions, and extreme loss of glazing. We have included window repair in the IMMEDIATE PHASE of the preservation plan.

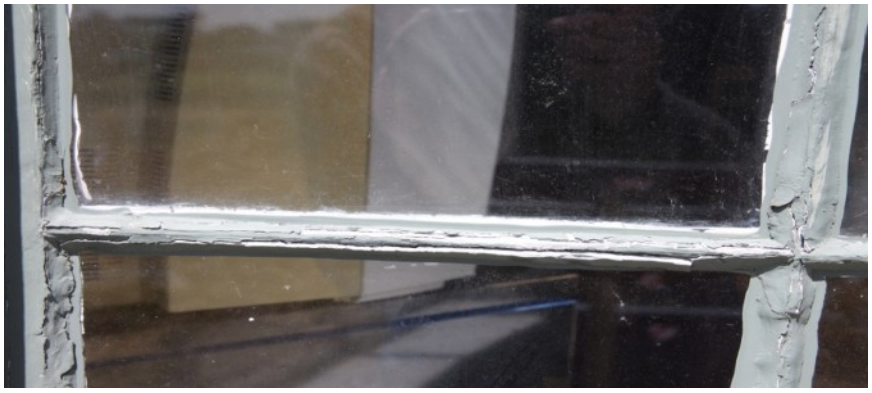


Figure #29: LOSS OF WINDOW GLAZING-POOR

Figure # 30: LOSS OF PROTECTIVE COATINGS -WINDOW SILL-POOR

Figure #31: LOSS OF PROTECTIVE COATINGS WINDOW SASH-POOR

In order to reduce the cost to the City of Pacific Grove, we recommend that volunteers be used to make necessary window repairs to the historic windows at the Point Pinos Lighthouse. While no conditions were rated CRITICAL –that would require complete replacement of a window unit, our survey did not include removal of failed coating systems in order to fully analysis existing conditions behind those coatings. Should damage be extensive beyond repair, then replacement fabric must match the historic in terms of quality, size, type, and craftsmanship of mill and installation labor.

Figure #32 : TYPICAL CONDITION OF CHIMNEY SYSTEM **POOR.**

The overall condition of the chimney system is rated as POOR.

There is a widespread CRITICAL need to repair all sides of the chimneys as there is comprehensive failure of coating systems, stucco, mortar joints, brick faces, and extensive structural cracks throughout the chimneys. There is fungus contamination. During the last roof installation a stainless steel flashing material was used to provide water tightness between the chimneys and cedar shake shingles. While stainless steel is normally recommended in a hostile coastal environment, its use on a historic structure is inappropriate in areas that are highly visible. Stainless steel unless etched does not receive and retain paint coatings as well. Copper would be a material that was used historically, has longevity in a hostile coastal environment, and does not require painting. Flashing should be tucked into a mortar joint that has been scored and then sealed with appropriate material to prevent water entry behind or between brick and flashing.

Figure #33:

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure#34 : CHIMNEY SYSTEM

Wire screen has been strapped to the top opening of the clay pipe flue in order to prevent bird entry. The wire and straps are in an advance state of deterioration and are rated as POOR. It is recommended that the strapped wire system be replaced by inserting a bronze disc into the flue opening in a manner that it cannot be seen yet will achieve the purpose of preventing bird entry.

Figure #35: CHIMNEY SYSTEM

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #36 : CHIMNEY SYSTEM

Failed paint and stucco should be removed to expose brick and mortar joints for proper evaluation of existing conditions and in order to develop proper scope of work. Brick and mortar joints should be inspected for damage. Mortar joints which are soft or damaged should be raked to remove loose material. Compression strength test should be conducted on stucco and mortar joint material to insure that replacement material does not exceed the compression strength of the historic material. Bricks damaged beyond repair should be replaced with bricks matching in texture, size, and quality. Stucco should be re-applied in lifts to allow proper drying without producing cracks or failure. Proper masonry primer should be used to seal stucco prior to application of historically appropriate finish coat.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #37: CHIMNEY SYSTEM

Flashing is a painted stainless steel which is not historically or aesthetically appropriate. It is recommended that during the next cedar shake shingle roof replacement, consideration be given to replacing the stainless steel with copper.

Figure#38 : CHIMNEY SYSTEM

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #39: TYPICAL EXISITNG CONDITION OF HISTORIC CHIMNEY SYSTEM.

Under no circumstances should the firebox and chimneys ever be used as designed for open flame heating. A qualified electrician should be contracted to determine if a lightning suppression system should be installed on the tops of the chimney system. Staff and /or volunteers should monitor for any leaks around ceilings on interior of living quarter's rooms.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #40: TYPICAL CONDITION OF BRICK CORBEL-**POOR**.

The brick corbels supporting the roof system on the rear-east elevation is rated POOR. A majority of the brickwork requires extensive repair and significant replacement. Replacement material must match original in size, character, and craftsmanship of installation.

Figure #41: TYPICAL CONDITION OF BRICK CORBEL.**POOR**

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #42 : ROOF SYSTEM-NORTH SECTION

The overall condition of the cedar shake shingle roof system is rated as POOR. There is a SERIOUS need to replace the roof system in the near future. Cedar shake roof repairs should be conducted soon to correct damage to ridge caps and fasteners in order to prolong the lifespan of the existing roof and defer cost of new roof system until other more IMMEDIATE needs are corrected and funding levels improve. When the roof system is scoped for replacement it is recommended that red cedar shake shingles be used and a high-grade stainless steel fastener be used for installation. (316 grade as a minimum grade)

Figure #43: ROOF SYSTEM -SOUTH SECTION

There is widespread mold and fungus contamination which accelerates deterioration of the cedar shake shingles and fasteners. A gentle washing of the roof system with a mild mixture of water and bleach is recommended to reduce the concentration of mold and fungus.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #44: ROOF RIDGE CAP

Ridge caps have a high volume of fungus and mold contamination, have missing ridge cap shingles and have a great number of loose ridge cap shingles. These deficiencies should be corrected ASAP in order to prolong the limited remaining life span of the existing roof system.

Figure #45 : RIDGE CAP DORMERS-NOTE MISSING RIDGE CAP.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #46: FLASHING AND SHINGLE SIDING DORMERS

The vertical cedar shake shingles installed on the dormers are rated GOOD to POOR. There are numerous split shingles particularly along the edge nearest the cedar shake shingle roof system and valleys. Rust oxidation stains from failed fasteners are also prevalent. Split shingles should be sealed with appropriate material until funding can provide replacements. Oxidized fasteners should be sprayed with rust inhibitors, neutralized, and then primed and painted.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #47: Historic oil house-front-west elevation.

The fuel storage building is rated GOOD to POOR and is constructed of stucco over fired brick with a wood truss roof system covered in cedar shake shingles. There are Louvre air vents on the west and east roof lines of the fuel storage building. There are corresponding air exchange vent openings along the floor area on the north and south which have been covered over by the exterior coat of stucco. These vent systems were designed and constructed within the walls to provide adequate air exchange in the fuel storage building interior. There is a replacement door hung on strap hinges. A concrete walkway connects the fuel storage building to the lighthouse. There are superficial cracks along the south, east, and north stucco walls. There is wood rot on several of the rafter tails on the roof system and several roof deck planks have rot and /or have been repaired with replacement boards. All wood surfaces which have been painted have widespread coating failure.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #48: Historic oil house-rear-east elevation.

There are two major modifications mounted on the east elevation of the fuel storage building. One is a run of electrical metal conduit and the other is a metal elongated box of unknown purpose. It may be related to the Loran equipment currently in use in the fuel storage building as a backup navigational system.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #49: SOUTH ELEVATION

There are surface cracks in the protective stucco on both elevations .Cracks should be measured, recorded by volunteers, and monitored for activity that results in change of measurements. Temporary measures should include filling cracks with elastomeric caulking to prevent additional moisture entry between stucco and brick inner wall.

Figure # 50: NORTH ELEVATION

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure# 51: FUEL STORAGE BUILDING- ROOF SUPPORT BRACKET.

The wood fabric on the exterior of the Fuel Storage Building is rated as FAIR. There is widespread coating failure, cracks, wood rot, and possible termite damage. A paint color analysis should be conducted prior to the removal of failed coatings. Failed coating systems should be scrapped off, wood sanded, gaps, cracks, and hollows filled with appropriate wood filler. Repaired and sanded areas should be primed and re-coated with paint colors based on paint color analysis.

Figure #52: Example of wood rot on rafter tail.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure#53: Example of roof deck plank which has been installed to replace damaged historic fabric.

Figure #54: Example of severe crack in fascia board.

Wood roof system should be scrapped, sanded, carefully repaired, and painted based on paint color analysis. This scope of work can be conducted by volunteers as long as they were mask and protective coating and contain, collect, and dispose of all paint debris.

Figure #55, #56, #57: TYPICAL CONDITIONS DOOR.

Typical condition of iron hinge and strap system used to support and operate door. Advanced deterioration of metal requires replacement with matching materials and design. Door is a ply-board replacement, is non-historic and inappropriate, and should be replaced with a ductile steel door based on documentation to match original iron door.

Figure #58 & #59: Typical conditions of iron door frame.

The doorframe is constructed inside the brick and stucco wall. There is severe oxidation of the ironwork in numerous sections of the frame. These areas should be sanded/cleaned to bare metal, treated with rust inhibitors, primed, and painted based on paint color analysis.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure # 60 & #61 : Showing cracks in the exterior stucco walls.

There are numerous hairline cracks located on several areas of the stucco walls. The source of these cracks is unknown. Staff/volunteers should measure and monitor cracks to determine if they are active and ongoing or a result of past building settling or tree root activity. Cracks should be sealed with caulking material to prevent additional water entry.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure # 62 & # 63 : Fuel Storage Building air vents.

The Louvre air vents located on the east and west rooflines provided a vital role in working in conjunction with those along the bottom of the walls to produce air exchange within the interior of the Fuel Storage Building. Currently, the vent system located on the east wall has been modified by the removal of the louvers and a ply-board panel installed to close the vent off from the inside. This modification is related to the use of Loran equipment inside the Fuel Storage Building. When and if that equipment is removed the vent system should be restored to match original. Copper screens should be installed to prevent insect entry.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure #64 & # 65: Front entrance porch

The entrance steps have been rated FAIR to POOR. There are small areas of spaulled concrete requiring patchwork to prevent additional damage and moisture entry.

Figure # 66:

The horizontal crack in historic fabric along the north side of the front porch is extensive and of unknown source. Staff and or volunteers should measure length, width, and record. An elastomeric caulking should be used to fill the gap until repairs can be made.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

Figure # 67 & # 68 :

There is a high degree of decorative fenestration on the front porch of the lighthouse. The fenestration has been rated as FAIR to POOR. There is widespread oxidation stains and loss of protective coatings. These conditions could be repaired by volunteers to reduce City of Pacific Grove cost.

CONDITIONS SURVEY

EXTERIOR-SPECIFIC

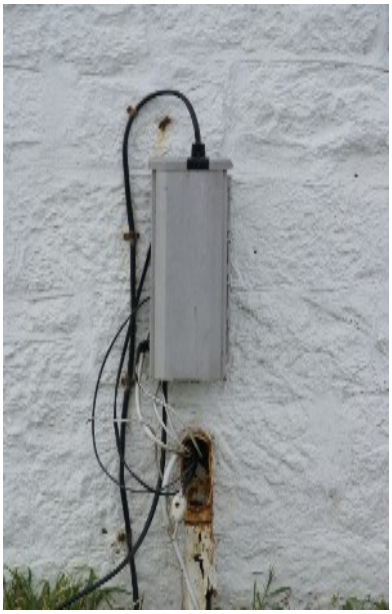


Figure #69, #70, #71, #72:

Outdated equipment, piping, and fasteners should be carefully removed from the exterior. Holes and damage should be filled in with appropriate material and painted with colors to blend in with adjoining surfaces.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure #1: Lantern Room canopy and framing.

The interior surfaces of lantern rooms have historically always been painted white to magnify the light produced by the lens lamps. Lighter colors also provided an early warning system of leaks and related rust as those stains appeared more readily on the white surfaces. Cleanliness was also a motivation for use of the lighter color as inspectors could better determine the effectiveness of Keeper's housekeeping responsibilities. Many lighthouse canopies had a zinc tin lining on attached to the iron canopy frame to prevent smoke and soot from collecting on the many edges of the iron frame and spider and instead on the flat surfaces of the zinc-tin liner. A tin umbrella was also installed in most lighthouses to further restrict the broadcast of soot onto the lining. In the case of the Point Pinos lantern room, both the zinc-tin lining and the tin umbrella are missing. It is not know n when and by whom the umbrella and tin lining were removed. If funding were ever available, these missing features should be returned to the canopy system and should be reproduced based on historic documentation as they would serve as valuable interpretive devices for understanding the function of the devices and duties of keepers.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure #2: LANTERN ROOM CANOPY.

There are numerous indications of water leaks and or damage in the canopy of the Point Pinos Lantern Room. Rust stains between the bronze canopy (dome) and the iron framework suggest a break in the exterior canopy seam that has allowed water entry between the two components. A water test should be performed with staff and or volunteers inside the lantern room to monitor possible water leak areas. There is also a breakdown of caulking material that was used to fill gaps and cracks along the horizontal cross- tie bracing the vertical stiles. It is not known when or why this material was installed. It should be removed to determine the extent of the gaps and or cracks in order to develop a scope of work for repair. If the material was simply to fill natural gaps between the two components it should be re-placed with an elastomeric caulking material. If the material was used to fill in cracks, the cracks should be repaired.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure # 3: STORM PANES.

The glass storm panes are secured in place by the use of bronze astragals fastened to the exterior stile. A caulking material was installed to attempt to provide a watertight seal to prevent water entry and entrapment between the bronze astragal, glass and iron stile. The caulking is in a state of failure and has allowed moisture into spaces between the components. The use of dissimilar metals in reaction to chlorides and moisture produce a catalytic reaction with a resultant corrosive process on the iron metal. Left unchecked that corrosive process will accelerate to a level of metal exfoliation which in turn will produce a high level of stress on the glass storm panes and bronze astragals. Rust staining is evident in several areas of the storm panes. More importantly, there is obvious stress related bending of the exterior bronze astragals. These areas are addressed in Specific Recommendations section and are part of the Immediate Treatment phase of work.

CONDITION SURVEY

INTERIOR-SPECIFIC

Figure #4: Bronze air vents.

Air exchange inside of lantern rooms of lighthouses have always been an issue and a challenge for the proper function and cost effectiveness of operating a fossil-fueled light source. Many design features incorporated into lighthouse lantern rooms were used to compliment and improve the overall process of moving air into and out of the lantern room in a manner that would exhaust heat, smoke, soot and humidity from the enclosed and often hot lantern room area. The movement of air also created a draft that would improve the over-all efficiency of the lamps as well. A variety of vent devices was installed throughout the lighthouse service. Though the design was based on the size and type of lighthouses there is little standardization even within similar lanterns. Most however were made of bronze and most had brass insect screens as part of their function to prevent insect entry into the lantern room which produced a function efficiency problem as well as a house keeping issue for keepers, as insects were a constant problem as they were attracted to the light at night.

The bronze vent systems in the Point Pinos Lantern Room are rated FAIR to POOR due to the overall deterioration and lack of maintenance. The repair and restoration of all vents should be untaken carefully in order that no damage to historic fabric occurs.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure #5: FLAT IRON LANTERN ROOM WALL PANELS.

The bottom section of the Point Pinos Lantern Room is constructed with flat iron plates secured in place by mechanical fasteners. The interior wall panels are rated GOOD to POOR based on our April site visit. There is SERIOUS deterioration of numerous areas of the wall panel on the interior surfaces. More significant is the CRITICAL need to stabilize and repair the areas with advanced exfoliation taking place as indicated in photographs below.

Figure #6 & # 7: The damage to metal and its cause should be corrected ASAP.

Figure #8 : Lantern Room deck.

The overall condition of the Lantern Room deck is rated as GOOD. Improved housekeeping isolated sanding and re-painting are all that are required on most areas of the deck. Areas which are in contact with moisture damage at lantern room wall plates need to be cleaned of loose metal, treated with a rust inhibitor, wiped with a solvent and then primed and finish coated with approved coatings based on historic paint color analysis.

Figure # 9: Stainless steel fasteners used to attach exterior flashing.

While the use of stainless steel in a hostile coastal environment is usually advised, their use in the Point Pinos Lighthouse may have not been necessary. It is believed that the aluminum flashing on the exterior lantern room wall was attached by these fasteners. The need of that flashing has yet to be determined. Its installation has created issues on the exterior deck historic fabric.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure#10: Inside surface of Lantern Room door requires immediate and extensive repair.

The lantern room door requires extensive repairs and should be conducted under IMMEDIATE phase.

Figure: Exfoliated metal creates stress on door and frame.

Figure# 11 & #12: Historic lock mechanism must be preserved and used.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure # 13 : Historic 3rd Order Henry LePaute Lens.

The 3rd Order Henry LePaute Fresnel lens continues to function as an active aid to Navigation operated by the United States Coast Guard. Its importance and significance either in a navigational or historic context cannot be overstated or overlooked. Any activity which might affect the function of the lens as an active Aid to Navigation must be approved by the United States Coast Guard and possible discontinuance of that function even on a temporary basis must be coordinated through proper Coast Guard channels and using Coast Guard personnel. Because of the vastly historic value and because of the extremely delicate character of the lens and frame all measures must be taken to protect it on a daily basis but especially during any and all work activity in the Lantern Room. Proper protective barriers must be erected around the lens during extensive repair activities.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

It is also recommended that a comprehensive photo-documentation be conducted to document existing conditions of the historic optic prior to any work activity by contractors.

A written description of each lens panel should accompany the photo documentation. Each panel should be coded and photographs should be keyed to those panel codes. A walk through with contractors and lighthouse representatives should be performed to outline, inspect, and identify existing conditions prior to work activity. Note: All historic optics within lighthouse lantern rooms are exposed to a hostile environment and as a result have a deterioration of historic fabric. Of particular importance is the caulking used to set the glass prisms into the brass frame. This material is highly vulnerable to age and heat and should be inspected for stability. Lens maintenance requires a high level of specialization and should not be performed by unqualified personnel. Stabilization of the historic optic must be a part of the cost of maintaining a historic lighthouse. Due to budget constraints, the United States Coast Guard cannot always perform even routine maintenance. Therefore, when and where possible it is advisable that a partnership be formed with the lighthouse owner and the United States Coast Guard to arrange and fund important lens stabilization when required. Refer to recommended consultants for qualified lens conservators.

Figure14: Preservation Consultant Ralph Eshelman inspects lens during April Site visit.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure #15: Historic 3rd Order Henry LePaute lens.

A professional Paint Consultant should be engaged to perform paint analysis on areas such as the iron Lens Housing and pedestal. Typical colors used on these areas differ than those currently in use. A standardized green has been found not only on United States lens systems but in Europe as well.

Figure #16: BRASS PLATE

Cleaning of the brass manufacturer's plate should be limited to wiping with a dry cloth. If cleaners are used make certain that they are not abrasive or harmful to the soft brass or erode the important information provided on the plate.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure# 17: STAIRWELL BELOW LANTERN ROOM.

The crack which has occurred in the support cylinder area just below the Lantern Room more than likely is related to the corresponding crack located on the exterior of the support cylinder. Further professional investigation is recommended. Loose plaster should be carefully removed to expose crack and concrete hidden by plaster in order to better determine cause and extent of damage. Staff/volunteers should measure length, depth, and width of crack and record. An elastomeric caulking should be inserted into the crack only to prevent moisture entry into interior. Any material used must be reversible and these recommendations are based on the concept that additional repair work will be conducted at a new future date. Note: Volunteers can be used to remove failed plaster, perform measurements and documentation, and apply caulking.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure # 18 : DAMAGE TO WALL PLASTER ALONG STAIR TREAD.

The damage to the wall plaster in the area of the stair tread is fairly limited but will enlarge if left unchecked. Remove loose plaster, wipe exposed surface to remove dust. Apply new plaster in thin coats and allow drying between coats. Sand to smooth finish. Repaint based on colors in same area.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure #19: Stonework in Basement NORTH WALL.

The Overall condition of the stonework throughout the basement is rated as GOOD to FAIR. There is a concern regarding obvious moisture damage in isolated areas of the basement. Evidence of the damage is illustrated by yellowing of coating system, failure of coating system, discoloration of stonework, loss of mortar joints between stones and in rare areas actual loss of stone fabric. It is believed that the moisture creating the damage is from damp rising coming through the floor and lower stonewalls. Loose paint should be carefully removed to expose as much stone surface and mortar joints as possible. Moisture content readings should be conducted, dated, and recorded on a monthly basis to establish extent and frequency of moisture entry. Record weather occurrence on date or around dates of moisture reading. There may be a need to dig pits or make probes to the ground area on the exterior of the stonework to determine avenue and cause of moisture entry.

Figure #20: EXAMPLE OF MOISTURE DAMAGE WEST WALL.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure # 21: VIEW OF ATTCI CRAWL SPACE ABOVE ATTACHED KITCHEN AREA. ORIGINAL CEDAR SHAKE SHINGLES FROM PRE-ADDITION WERE STILL IN PLACE.

Access to the crawl space above the attached addition was gained through a small opening in the kitchen ceiling. Several historically significant fabric and features were noted during the inspection. There are remaining cedar shake shingles from the much earlier period prior to the expansion of the addition to the rear /east elevation of the lighthouse. Also observed was sections of plaster over the stones of the wall indicating that this area was also part of the earlier lean-to addition indicated in accompanying photograph.

Figure #22: Evidence of earlier plastered wall.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure #23: Photograph showing earlier lean to addition to rear-east elevation of Point Pinos Lighthouse.

Evidence found in attic crawl space document the exisitence of materials used during the period that the lean-to addition was attached to the rear-east elevation of the Point Pinos Lighthouse. This smaller attachment pre-dated the existing addition and appears to have been incorporated into the expanded rear addition.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure #24: Leaking water pipe below bathroom.

Inspection of the crawl space below the bathroom area revealed a water pipe leak. Pipes below the bathroom are in poor condition with a high incidence of rust especially at areas where they make contact with the ground. If water use continues inside of historic building new pipes are highly recommended. Continuance of leaks will result in damage to wood and stone, and mold and mildew contamination. Periods of hard freeze will also increase extent of damage to stonework.

Figure #25: Small access door in bathroom floor.

Figure #26 : Maze of electrical lines and conduit in ceiling of basement.

In the future the improvement of existing and confusing electrical runs should be considered. As this is a restricted area reserved for United States Coast Guard use, this scope of work should not be pursued until the Coast Guard deems it necessary. Request that they inspect all electrical runs for grounds to insure that no accidental electrical fires occur.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure #27, #28, & #29: Historic material currently stored in basement:

During our site visit we noted a collection of apparently historic materials stored in the basement of the lighthouse. Retention and possible re-use of these historic elements is highly recommended. If known their place or origin should be marked on the underside discreet edges of the material, i.e. if a door the bottom or top edge.

CONDITIONS SURVEY

INTERIOR-SPECIFIC

Figure #30: Water collection and storage cistern.

Access to the historic 1000-gallon cistern was gained by a small trap door in the floor of the north-parlor closet. The cistern is rated as GOOD but should not be relied upon for water storage. Photo documentation of this system should be used to interpret this significant system to visitors. There is a small amount of debris deposited on the cistern floor. Volunteers should carefully collect the debris, screen it and bag and tag any historic materials for identification and storage.

Figure #31: Floor of cistern

CONDITIONS SURVEY

INTERIOR-SPECIFIC

FIGURES #32 &#33: Interior of historic Fuel Storage Building: Looking east and west.

The interior of the historic Fuel Storage Building is currently closed to access due to its use as facility housing Loran back-up navigational equipment. Should that use be changed in the near future, the interior of the Fuel Storage Building should be converted to interpretive/public use to depict the storage of fuels used in the operation of the Point Pinos Lighthouse.

Figure #34: Ceiling of Fuel Storage Building.

PRESERVATION PLAN

LONG RANGE RECOMMENDATIONS

Figure #1: Reconstructuion of missing historic support buildings.

It is our recommendation that consideration be given to reconstruction several of the former historic support buildings which have been removed over the years. The cost of this recommendation has not been estimated. Reconstruction must be conducted based on sound historic documentation and must follow the Secretary of the Interiors Standards for the Treatment of Historic Structures.

The economic and interpretive benefit of reconstruction of the two buildings closets to the lighthouse would be expanded retail operation to greatly increase retail revenues that would provide a more sustainable operational budget as well as an expanded interpretive mission that would provide a more authentic understanding of a more complete Point Pinos Light Station. The addition of these buildings would provide the opportunity to interpret the main down stairs rooms more fully by removing the small retail operation currently located in a closet which houses an important section of the lighthouse weight well system which currently is not being fully interpreted to visitors.

PRESERVATION PLAN

LONG RANGE RECOMMENDATIONS

Figure #2: RESTORATION OF THE CEDAR TREE HEDGE.

The restoration of the cedar tree hedge would provide a natural barrier to the infill new construction that currently has an adverse impact on the historic context of the Point Pinos Lighthouse.

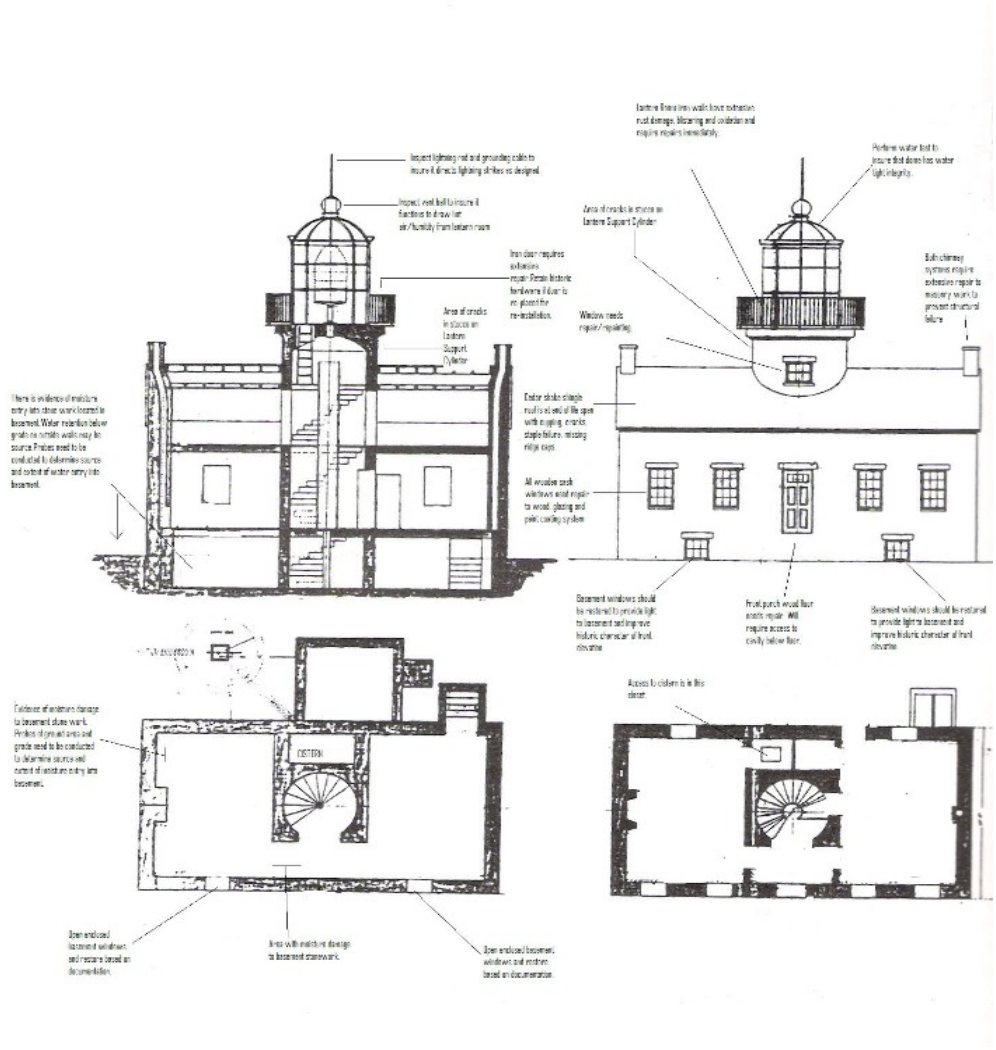
THE POINT PINOS LIGHTHOUSE

PRESERVATION PLAN.

RECOMMENDATIONS FOR TREATMENT/SPECIFIC:

The overall condition of the Point Pinos Lighthouse is considered to be **GOOD TO POOR** due to the condition of significant areas of the lighthouse such as the Lantern Room and the overall condition of the exterior stucco which is allowing damaging moisture into the interior of the Lighthouse. There are several areas on and in the lighthouse which have a **QCR** of **POOR /MDPR of CRITICAL.** These areas include iron door to access Lantern Room gallery deck, and the cracks in the stucco and cpncrete in the support cylinder. These areas must be addressed as quickly as possible first through identification, documentation, and stabilization when and where possible and practical and then repair and restoration when funding is available. In areas accessed by volunteer workers, staff, consultants, and/or other participants - immediate stabilization is recommended. Warning signs and caution tape should be posted at all **CRITICAL** areas where staff/ volunteer safety are an issue.

There is however, an extremely high degree of historic integrity remaining in the lighthouse which is rated **GOOD** to **FAIR** . We have listed the specific recommendations for treatment by order of priority, beginning with those with areas with a **QCR** of **POOR/MDPR** of **CRITCAL** or those which represent a clear and present danger to staff and /or volunteers.

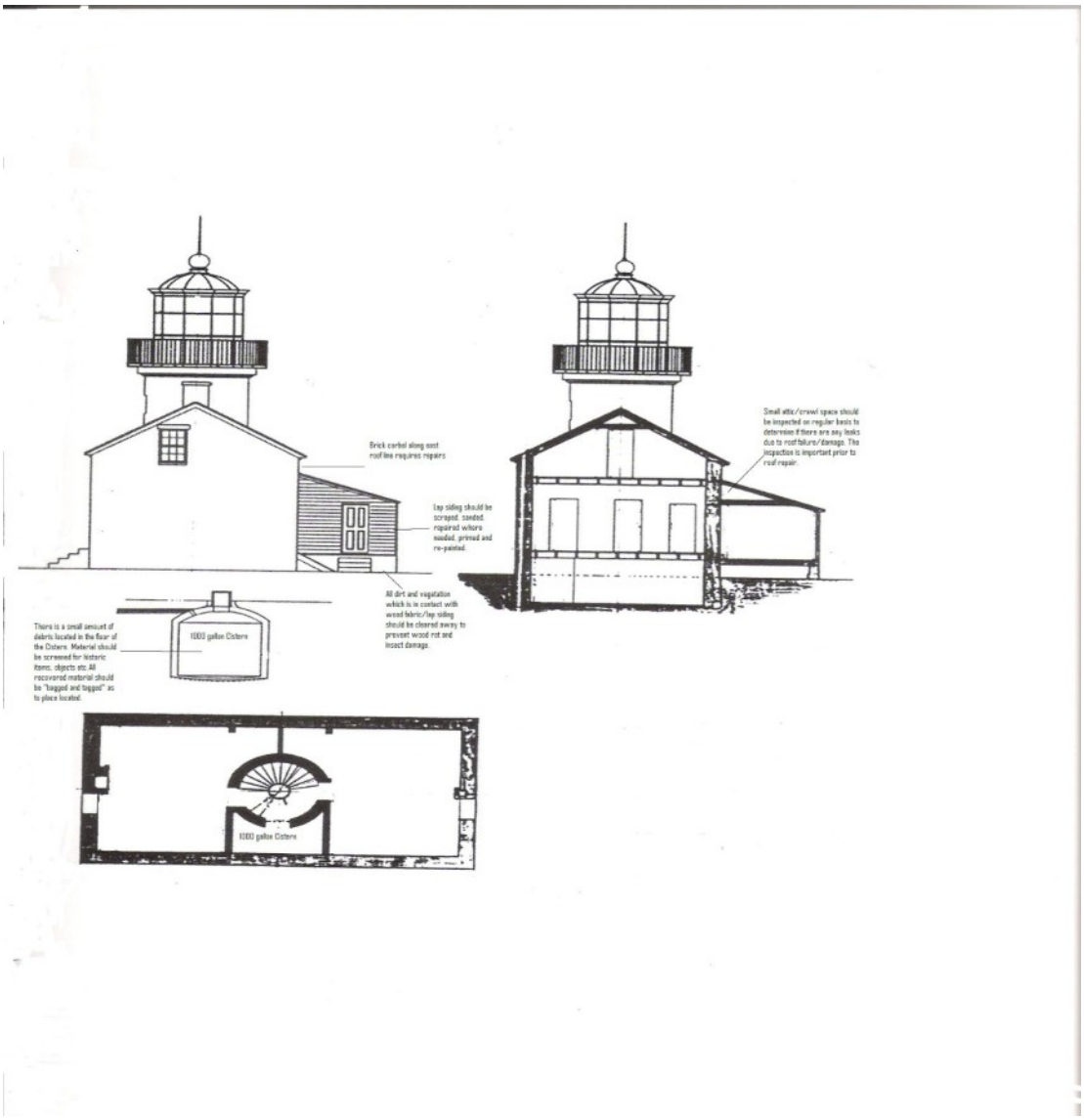


Specific Recommendations for Treatment: Page 2 of 36 .

THE POINT PINOS LIGHTHOUSE

PRESERVATION PLAN.

RECOMMENDATIONS FOR TREATMENT/SPECIFIC:



POINT PINOS LIGHTHOUSE

LANTERN ROOM AND RELATED SUPPORT SYSTEM

Photo: LR # 1.

QCR-GOOD-POOR - MDPR -SERIOUS TO CRITICAL

Due to the degree and extent of damage to the Lantern Room we recommend that this area receive the most immediate attention and funds to correct. While Staff and volunteers can remove failed coating systems clean exfoliated metal, and use selected metal filler and prime and repaint safely, the replacement of extensively damaged metal work on the Lantern Room and related support system require professional and skilled contractors.

It is our findings that the numerous exterior wall panels have reached a level of failure that will necessitate extensive repair and replacement of several of the iron Lantern Room wall panels.

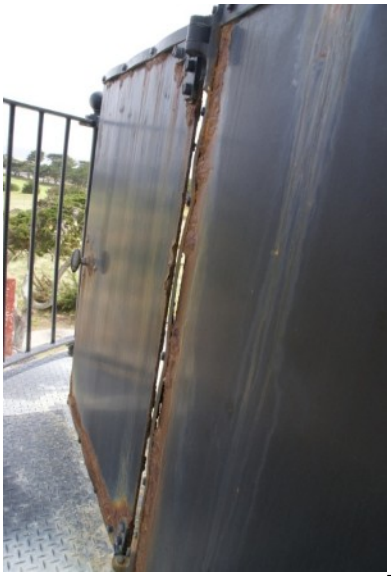
Some Lantern Room sections can be cleaned, repaired, and re-coated while removed from top of the Lighthouse.

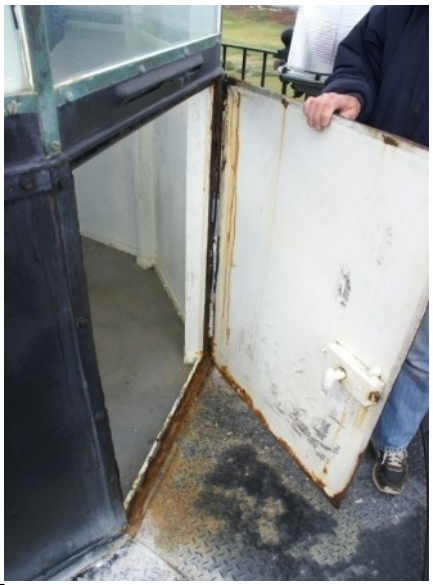
★ **STANDARDS FOR TREATMENT:**
RESTORATION / RECONSTRUCTION

Specific Recommendations for Treatment: Page 4 of 36 .

POINT PINOS LIGHTHOUSE

LANTERN ROOM DOOR





QCR-POOR / MDPR -CRITICAL to CATASTROPHIC.

The Lantern Room door is rated CRITICAL advanced deterioration to historic fabric on both the door and related fabric securing the door to the door- frame. Severe "Rust Jacking" has created loss of structural integrity and limited operational capacity of door which binds during movement. Continued damage will result in loss of door function as well as require complete replacement. Currently, door does not close properly –allowing wind driven water into Lantern Room which has also resulted in damage to interior metal –work as a result of moisture being sandwiched between Lantern Room wall panels, deck plates and adjoining connections.

★ **STANDARDS FOR TREATMENT:**
PRESERVATION / STABILIZATION / RESTORATION.

Refer to: Preservation Brief # 6: Dangers of Abrasive Cleaning to Historic . **Preservation Brief # 16:** Use of Substitute Materials on Historic Building Exteriors. **Refer to: Preservation Brief # 27:** The Maintenance & Repair of Architectural Cast Iron.

Note: Historic latch system should be re-used if door is deemed to need to be replaced with new material.

Specific Recommendations for Treatment: Page 5 of 36 .

POINT PINOS LIGHTHOUSE

LANTERN ROOM AND RELATED DAMAGED METAL

Photo: LR#2 and#3: Loss of integrity of astragals which secure wall panels to lantern room frame.

Spray “Loose Nut” or other similar product to facilitate removal of bolts holding astragals to iron plate. Carefully back bolts out. (bag and tag). Tag all astragals according to their original location prior to removal. Use careful means such as rubber mallet to straighten astragals. Return all repaired astragals to their original locations once all repairs have been made to iron wall panels

Replacement wall panels should be of ductile steel which has been metalized, primed with a zinc base primer and finished coated with an approved metal paint such as WASSER prior to installation and touched up after installation to seal any scratches to finish paint surface. Repair/replacement must match historic fabric in terms of size, quality, and craftsmanship.

★ **STANDARDS FOR TREATMENT:**
RESTORATION / RECONSTRUCTION

Specific Recommendations for Treatment: Page 6 of 36 .

POINT PINOS LIGHTHOUSE

LANTERN ROOM GALLERY DECK AND RELATED SUPPORT SYSTEM

Note missing nut on far right support bracket. Note build up of aluminum oxide along top edge of bracket along seams and connector bolt heads.

Refer to: Preservation Brief # 27: The Maintenance & Repair of Architectural Cast Iron.

Preservation Brief # 6: Dangers of Abrasive Cleaning to Historic Buildings. **Preservation Brief # 37:** Appropriate Methods for Reducing Lead Based Paint Hazards.

Preservation Brief # 16: Use of Substitute Materials on Historic Building Exteriors.

* Inspect all support brackets and connections to determine structural integrity.

* Inspect all metal surfaces and welds for any scratches, breaks, or damage to finish coatings. Clean all surfaces and connectors of aluminum oxidation. Hand- brush all surfaces to remove surface rust, scale and debris. Apply MK350 or Ospho to neutralize surface oxidation. Prime with zinc base primer ASAP. Use approved metal coating and historic colors to finish coat all damaged paint surfaces. Any & all replaced metal must match the replaced system in scale, design, and materials and should be etched with year of casting replacement to identify new fabric.

* Staff should conduct periodic inspections of all metal- work for signs of oxidation and repair ASAP to prevent expensive damage to finish coats from occurring.

★ **STANDARDS FOR TREATMENT:**
RESTORATION / RECONSTRUCTION

Specific Recommendations for Treatment: Page 8 of 36 .

POINT PINOS LIGHTHOUSE

LANTERN ROOM GALLERY DECK & SAFETY RAILING SYSTEM

Photo: WRSGD&SRS#1: Note: Under no circumstances should visitors be permitted or provided a means of unauthorized access to this area even when repaired.

Inspection during site visit in April of 2009 found loss of protective coatings and damage to significant historic fabric. There is widespread oxidation on most metal surfaces related to use of aluminum metal during previous repair work. Oxidation should be cleaned to determine structural integrity of deck plates, support brackets, and connectors.

Specific Recommendations for Treatment: Page 9 of 36 .

* Hand Sand surface areas. Some mechanical devices are permitted under strict criteria. Absolutely no grinders or belt sanders of any type.

Needle guns at slow speed are permitted to remove only loose ,cracking and rough coatings to smooth and stable condition.

* Identify any damage, cracks, fractures, and/ or separations. Pay particular attention to picket attachments to top and bottom rails. Check for loose pickets, rusted surfaces or other evidence of damage, cracks, splits and / or separations.

* Gently sand all surfaces to smooth finish.

* Fill holes, voids, with approved metal filler. Fill cracks and separations with approved metal filler. Sand to smooth condition.

* Use Ospho to neutralize surface oxidation/rust.

*Prime bare areas and repaint with approved coatings.

* Apply appropriate finish coat based on paint color analysis.

Absolutely no open flame; Do not use mechanical device in close proximity to canvas and /or plastic containment systems and/or cleaning agents or paint always maintain a safe distance . Keep fire extinguisher within arm's reach; Stop all paint removal by mechanical device at least two hours prior to departure from site; clean up all paint debris immediately.

Refer to : Preservation Brief # 27: The Maintenance & Repair of Architectural Cast Iron**. Preservation Brief # 6:** Dangers of Abrasive Cleaning to Historic Buildings.

★ **STANDARDS FOR TREATMENT:**
PRESERVATION / STABILIZATION / RESTORATION

* If historic metalwork is removed- metalwork needs to be inspected, coded to original location for re-installation repaired, primed and repainted with specified metal coatings and re-installed.

* Mask al l historic fabric to protect soft surface from any cleaning technique used on metal- work in area.

If metal- work cannot be removed, then it must be thoroughly cleaned of all loose scale/rust, primed, and painted prior to re-installation.

* Hand Scrape surface areas with loose coatings and rust scale. (Some use of proper mechanical devices are permitted under strict criteria): **Absolutely no open flame; Do not use mechanical device in close proximity to canvas and /or plastic containment systems and/or cleaning agents or paint always maintain a safe distance . Keep fire extinguisher within arm's reach; Stop all paint removal by mechanical device at least two hours prior to departure from site; clean up all paint debris immediately.**

* Hand Sand surface areas. Some mechanical devices are permitted under strict criteria. Absolutely no grinders or belt sanders of any type.

Needle guns at slow speed are permitted to remove only loose ,cracking and rough coatings to smooth and stable condition.

* Identify any damage, cracks, fractures, and / or separations.

* Gently sand all surfaces to smooth finish.

* Fill holes, voids, with approved metal filler. Sand to smooth condition.

* Use MK 350 or Ospho to neutralize surface oxidation/rust.

*Prime bare areas and repaint with approved coatings.

* Apply appropriate finish coat based on paint color analysis (Probably black).

★ **STANDARDS FOR TREATMENT:**

PRESERVATION / STABILIZATION / RESTORATION / RECONSTRUCTION

Refer to : Preservation Brief # 27: The Maintenance & Repair of Architectural Cast Iron**. Preservation Brief # 6:** Dangers of Abrasive Cleaning to Historic Buildings.

Preservation Brief # 16: Use of Substitute Materials on Historic Building Exteriors.

POINT PINOS LIGHTHOUSE

EXTERIOR STUCCO/CONCRETE WALLS

QCR-POOR - MDPR -SERIOUS TO CRITICAL

* Take sample from area with loose concrete and stucco for testing to establish concrete & stucco compression strength and composition.

* Rack all loose concrete & stucco to remove material that has lost its integrity.

* cracks with a depth greater than 1/8th should be repaired using mix of concrete mix with compatible compression strength and composition. A concrete color should be achieved to match as closely as possible the historic concrete color on surfaces which will not be re-coated. Contractor should provide a two foot by two foot "mock up" test area prior to widespread re-pointing. Cracks with a depth greater than ¼ inch should be repaired using more than one lift of mortar so as not to apply repair mix too thick.

* Areas with failed stucco should be removed and repaired with matching mix, applied in lifts rather than one thick application.

POINT PINOS LIGHTHOUSE

SUPPORT CYCLINDER EXTERIOR STUCCO/CONCRETE WALLS

* Areas with extensive spalling of stucco brick face should be removed for replacement of damaged material. (Note: Exposed softer core will attract and retain moisture and result in additional damage to adjoining concrete.

* Replacement concrete must match exactly historic material in terms of color, strength, size, and texture.

* In areas with loss of stucco use same standards as those applied to replace extensively spalled stucco.

* In areas with structural cracks, rack cracks of loose debris. Fill cracks with compatible grout or approved elastomeric caulking.

* In areas with hairline cracks fill cracks with approved elastomeric caulking.

* Prime all masonry surfaces intended to be painted with approved masonry primer.

Finish coat all masonry surfaces intended to be painted with colors determined by paint color analysis and /or other documentation.

Refer to: Preservation Brief # 6: Dangers of Abrasive Cleaning to Historic Buildings.

Preservation Brief # 2: Re pointing Mortar Joints in Historic Buildings.

Preservation Brief # 1: The Cleaning and Waterproof Coating of Masonry Buildings.

★ **STANDARDS FOR TREATMENT:**
PRESERVATION / STABILIZATION / RESTORATION

POINT PINOS LIGHTHOUSE

INTERIOR LANTERN ROOM SUPPORT CYLINDER

Photo:

QCR- FAIR to POOR/ MDPR -SERIOUS - SEVERE.

The INTERIOR WALLS are rated with a QCR of FAIR TO POOR and a MDPR of SERIOUS TO SEVERE. The extent of damage could only be established in visible surface areas from the support cylinder of the lighthouse during the site visit. Those areas with the poorest rating had extensive loss surface fabric; apparent hairline & structural cracks which might be attributed to exfoliating cast iron built into or attached onto the concrete structure. A closer and more comprehensive inspection of the interior of the wall area will be required to establish a scope of work and better determine cost estimates.

PRESERVATION / STABILIZATION / RESTORATION.

Refer to: Preservation Brief # 6: Dangers of Abrasive Cleaning to Historic Buildings.

Preservation Brief # 2: Re-pointing Mortar Joints in Historic Buildings.

Preservation Brief # 1: The Cleaning and Waterproof Coating of Masonry Buildings.

Specific Recommendations for Treatment: Page 14 of 36 .

POINT PINOS LIGHTHOUSE

LANTERN ROOM STORM PANES AND FRAMING PANELS

QCR- FAIR to POOR - MDPR -MINOR to SERIOUS.

Photo: LR#5: Repairs to storm pane glass and framing should take place in controlled work environment to reduce salt and other contaminates from impregnating metal -work. Re-used glass and metal should be carefully cleaned of existing dust, rust, and chlorides prior to re-painting and re-assembly on lighthouse. All metal surfaces should be primed and re-coated with approved coating systems prior to installation of glass or re-assembly at top of lighthouse. Check all surfaces for damage or scratches to newly painted surfaces and re-pair as needed. All weatherproofing seals and gaskets should be replaced prior to re-assembly. All re-used/replaced storm pane glass should be free of chips, cracks, and imperfections.

Stiles should be thoroughly cleaned to white metal, primed, and re-coated based on historic colors. Inspect each stile particularly at area which comes into contact with bronze air vent .Typically inside edges of stiles have damage related to contact between two dissimilar metals and the presence of water serving as a catalyst.

* Once cleaned all stiles and mullions should be primed and recoated based on historic colors. (Typically white in interior areas to magnify light and black on exterior surfaces to match historic Lantern Room colors).

POINT PINOS LIGHTHOUSE

LANTERN ROOM STORM PANES AND FRAMING PANELS

★ **STANDARDS FOR TREATMENT:**
PRESERVATION / STABILIZATION / RESTORATION

Refer to : Preservation Brief # 6: Dangers of Abrasive Cleaning to Historic Buildings.

Preservation Brief # 16: Use of Substitute Materials on Historic Building Exteriors.

Refer to: Preservation Brief # 27: The Maintenance & Repair of Architectural Cast Iron

Preservation Brief # 37: Appropriate Methods for Reducing Lead Paint Hazards.

POINT PINOS LIGHTHOUSE

LANTERN ROOM AIR EXCHANGE VENT GRILLS

QCR-POOR -MDPR- SERIOUS

Photo: LRAEVG #1: Interior surface of Air Exchange Vent Grill.

Photo: LRAEV #2: Exterior surface of Air Exchange Vent Grill.

Specific Recommendations for Treatment: Page 17 of 36 .

* The Lantern Room air exchange vent grills are attached to the lantern room wall are rated with a QCR of POOR and a MDPR of SERIOUS. Great care and caution should be used in removing the air exchange grills.

* Soak head of connector bolt with WD 40 or other approved product to loosen fusion of oxidized bolts on vent plates.

* Code each bronze vent prior to removal to indicate place of origin for re-installation in proper location. Inspect each vent to determine if it is already coded with a numerical mark as most lighthouse components were so coded prior to shipment to site for proper installation. Once removed from lantern room carefully crate each section for relocation offsite for cleaning and repair.

*Some vent grills may need to be replaced. Replacement elements must match the original in design.

* Carefully clean all surfaces of dust, debris, and chlorides prior to re-painting.

* Check each vent grill to inspect for breaks or flaws in vents and /or frame. Make certain no racking has occurred to prevent proper weather tight re-installation of vent.

* Install proper rubber gasket around vent frame prior to re-installation to insure water tightness.

* Touch up all surfaces scratched during reinstallation process to re-coat exposed metal surfaces.

Refer to: Preservation Brief # 6: Dangers of Abrasive Cleaning to Historic Buildings.

Preservation Brief # 16: Use of Substitute Materials on Historic Building Exteriors.

Refer to: Preservation Brief # 27: The Maintenance & Repair of Architectural Cast Iron

Preservation Brief # 37: Appropriate Methods for Reducing Lead Paint Hazards.

★ STANDARDS FOR TREATMENT:
PRESERVATION / STABILIZATION / RESTORATION / RECONSTRUCTION

Specific Recommendations for Treatment: Page 18 of 36 .

POINT PINOS LIGHTHOUSE

LANTERN ROOM CANOPY & VENT BALL

QCR- FAIR - MDPR -SERIOUS

Photo: LRC&VB #1.

The existing condition of the Point Pinos Lighthouse canopy and vent ball is unknown. Due to safety concerns we were unable to access the dome of the lighthouse to inspect the condition of the vent ball or water tightness or structural integrity of the metal panel canopy. We noted no evidence of water intrusion from the canopy on the inside of the Lantern Room to indicate any failure of the weather tightness of the canopy or vent ball. Over-all condition of the canopy and vent ball should be thoroughly inspected. Note: Lightning rod ground connection should be established.

Refer to: Preservation Brief # 27: The Maintenance & Repair of Architectural Cast Iron. **Preservation Brief # 6:** Dangers of Abrasive Cleaning to Historic Buildings.

Preservation Brief # 37: Appropriate Methods for Reducing Lead Based Paint Hazards.

Preservation Brief # 16: The Use of Substitute Materials on Historic Building Exteriors.

★ **STANDARDS FOR TREAMENT:**
PRESERVATION / STABILIZATION / RESTORATION /RECONSTRUCTION.

Specific Recommendations for Treatment: Page 19 of 36 .

POINT PINOS LIGHTHOUSE

LANTERN ROOM CANOPY & VENT BALL

Have contractor perform water test on Lighthouse canopy once it has been re-installed. Have staff member monitor test from inside Lantern Room paying close attention to any moisture penetration into canopy along seam lines.

Refer to: **Preservation Brief # 27:** The Maintenance & Repair of Architectural Cast Iron. **Preservation Brief # 6:** Dangers of Abrasive Cleaning to Historic Buildings.

Preservation Brief # 37: Appropriate Methods for Reducing Lead Based Paint Hazards.

Preservation Brief # 16: The Use of Substitute Materials on Historic Building Exteriors.

★ **STANDARDS FOR TREAMENT:**
PRESERVATION / STABILIZATION / RESTORATION /RECONSTRUCTION.

Specific Recommendations for Treatment: Page 20 of 36 .

POINT PINOS LIGHTHOUSE

HISTORIC OPTIC SUPPORT PEDESTAL

Figure 12: Extreme care must be taken to protect historic optic and support during any work activity.

QCR- GOOD/MDPR-MINOR

* Inspect pedestal to identify and collect paint samples for color analysis.

* Once proper containment/collection systems have been installed in work area, wire brush the affected surface areas, removing loose scale, blistered paint and oxidation.

* Sand surface area to remove superficial oxidation and wipe with mineral spirits.

* Apply MK350 or Ospho to all cleaned metal surfaces to neutralize surface oxidation/rust.

* Check all areas for cracks or other evidence of damage to metal. Mark damaged area and record for future inspection/repair.* Fill voids and hollows with appropriate metal filler and sand smooth and level

Specific Recommendations for Treatment: Page 21 of 36.

POINT PINOS LIGHTHOUSE

HISTORIC OPTIC SUPPORT PEDESTAL

Figure 13: Extreme care should be taken to protect bronze manufacture's plate on pedestal.

* Apply appropriate zinc based primer to affected areas as soon as area is sanded and wiped with mineral spirits to prevent re-oxidation.

* Apply appropriate finish coat using correct color match to historic colors if available at time of maintenance.

Refer to: Preservation Brief # 27: The Maintenance and Repair of Architectural Cast Iron; **Preservation Brief # 37:** Appropriate Methods for Reducing Lead Paint Hazards. **Preservation Brief # 6:** Dangers of Abrasive Cleaning to Historic Buildings.

★ **STANDARDS FOR TREATMENT:**
PRESERVATION / STABILIZATION / RESTORATION

Specific Recommendations for Treatment: Page 22 of 36.

POINT PINOS LIGHTHOUSE

WOOD WINDOW FABRIC

QCR-MINOR/MDPR- SERIOUS:

* Work on exterior wood window fabric should only be performed with proper Haz Mat collection systems installed.

* Use gentle detergent mixed with 10% bleach to clean area to be repaired or repainted.

* Hand sand areas with paint coating failure and/or high paint profiles due to paint buildup only after it is determined that the wood is dry.*Use appropriate wood filler to fill gaps, cracks, and holes. (See recommended product information sheets in Recommended Products Section to find appropriate products.)

* There is advanced wood rot on several of the windows, resulting in a deep dry rot.

* It is recommended that the wood rot be removed to sound wood, bleach be thoroughly sprayed into damaged area, allowed to dry and filled with Abracon wood filler.

* Once repairs have been made to windows and window casing, (scraping loose paint, sanding, filling damage, priming, repainting).

* Re-glaze missing and weakened window glazing.

* Make certain wood is dry before further treatment.

* Nail loose boards back into place, sand surface and clean dust, apply appropriate flexible caulking to fill gaps and prime and re-paint.

* Sand to smooth surface, wipe gently with mineral spirits to remove paint dust.

* Prime with appropriate prime coats and provide finish coats based on historic colors.

Refer to: Preservation Brief #10: Exterior Paint Problems on Historic Woodwork; **Preservation Brief #37:** Appropriate Methods for Reducing Lead Paint Hazards;

Preservation Brief # 9: The Repair of Historic Wooden Windows;

Preservation Brief #6: Dangers of Abrasive Cleaning to Historic Buildings.

★ **STANDARDS FOR TREATMENT:**
PRESERVATION / STABILIZATION / RESTORATION /RECONSTRUCTION

POINT PINOS LIGHTHOUSE

BRICK CHIMNEYS

QCR- FAIR to POOR/ MDPR -SERIOUS to CRITICAL.

* Take mortar sample from area with loose mortar and stucco for testing to establish mortar & stucco compression strength and composition.

* Rack all loose mortar joints & stucco to remove material that has lost its integrity.

* Mortar joints with a depth greater than 1/8th should be repaired using mix of mortar with compatible compression strength and composition. A mortar color should be achieved to match as closely as possible the historic mortar color on surfaces which will not be re-coated. Contractor should provide a “mock up” test area prior to widespread re-pointing. Mortar joints with a depth greater than ¼ inch should be repaired using more than one lift of mortar so as not to apply mortar mix too thick.

Specific Recommendations for Treatment: Page 25 of 36 .

* Areas with failed stucco should be removed and repaired with matching mix, applied in lifts rather than one thick application.

* Areas with extensive spalling of hardened brick face should be removed for replacement of damaged brick. (Note: Exposed softer brick core will attract and retain moisture and result in additional damage to adjoining brick and mortar joints).

* Replacement brick must match exactly historic brick in terms of color, strength, size, and texture.

* In areas with loss of brick use same standards as those applied to replace extensively spalled brick.

* In areas with structural cracks, rack cracks of loose debris. Fill cracks with compatible grout or approved elastomeric caulking.

* In areas with hairline cracks fill cracks with approved elastomeric caulking.

* Prime all masonry surfaces intended to be painted with approved masonry primer.

Finish coat all masonry surfaces intended to be painted with colors determined by paint color analysis and /or other documentation.

PRESERVATION / STABILIZATION / RESTORATION.

Refer to: Preservation Brief # 6: Dangers of Abrasive Cleaning to Historic Buildings.

Preservation Brief # 2: Re pointing Mortar Joints in Historic Buildings.

Preservation Brief # 1: The Cleaning and Waterproof Coating of Masonry Buildings.

★ **STANDARDS FOR TREATMENT:**
PRESERVATION / STABILIZATION / RESTORATION

POINT PINOS LIGHTHOUSE

BRICK CORBEL ALONG EAST -REAR ROOF LINE

QCR-POOR / MDPR -CRITICAL to CATASTROPHIC

Photo: Brick corbel#2.

* Take mortar sample from area with loose mortar for testing to establish mortar compression strength and composition.

* Rack all loose mortar joints to remove mortar that has lost its integrity.

* Mortar joints with a depth greater than 1/8th should be repaired using mix of mortar with compatible compression strength and composition. A mortar color should be achieved to match as closely as possible the historic mortar color on surfaces which will not be re-coated. Contractor should provide a “mock up” test area prior to widespread re-pointing. Mortar joints with a depth greater than ¼ inch should be repaired using more than one lift of mortar so as not to apply mortar mix too thick.

* Areas with extensive Spalling of hardened brick face should be removed for replacement of damaged brick. (Note: Exposed softer brick core will attract and retain moisture and result in additional damage to adjoining brick and mortar joints).

Specific Recommendations for Treatment: Page 27 of 36 .

* Replacement brick must match exactly historic brick in terms of color, strength, size, and texture.

* In areas with loss of brick use same standards as those applied to replace extensively spalled brick.

* In areas with structural cracks, rack cracks of loose debris. Fill cracks with compatible grout or approved elastomeric caulking.

* In areas with hairline cracks fill cracks with approved elastomeric caulking.

* Prime all masonry surfaces intended to be painted with approved masonry primer.

Finish coat all masonry surfaces intended to be painted with colors determined by paint color analysis and /or other documentation.

*Note: This scope of work should be performed by qualified contractors.

★ **STANDARDS FOR TREATMENT:**
PRESERVATION / STABILIZATION / RESTORATION.

Refer to: Preservation Brief # 6: Dangers of Abrasive Cleaning to Historic Buildings.

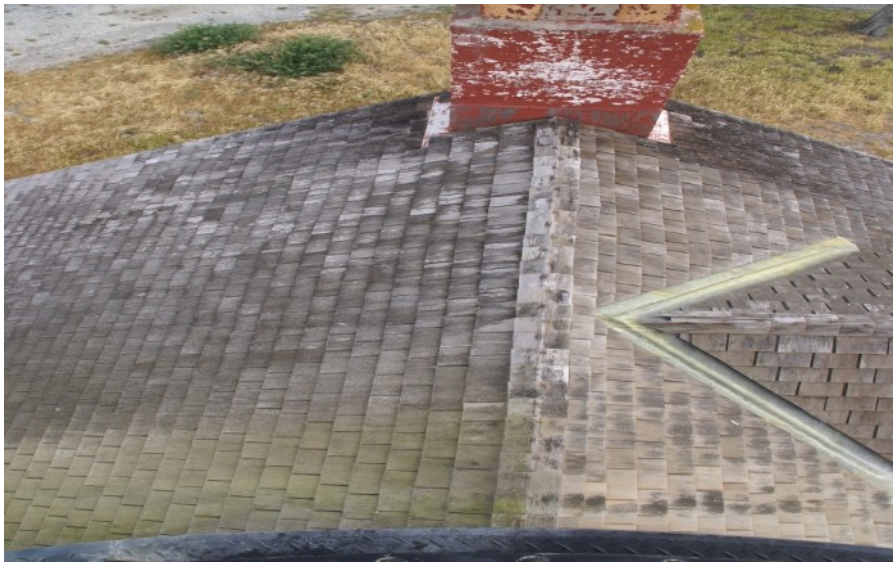
Preservation Brief # 2: Re-pointing Mortar Joints in Historic Buildings.

Preservation Brief # 1: The Cleaning and Waterproof Coating of Masonry Buildings. **Preservation Brief # 16:** Use of Substitute Materials on Historic Building Exteriors.

Specific Recommendations for Treatment: Page 28 of 36 .

POINT PINOS LIGHTHOUSE

CEDAR SHAKE SHINGLES



Specific Recommendations for Treatment: Page 29 of 36 .

POINT PINOS LIGHTHOUSE

ROOF SYSTEM- GUTTERS AND DOWNSPOUTS

Specific Recommendations for Treatment: Page 30 of 36 .

POINT PINOS LIGHTHOUSE

FAILED COATING ON BRICK AND OTHER HISTORIC FABRIC

Photo: LBPC # 4.

Photo : LBPC #Paint color analysis by qualified consultant should be conducted on all painted historic fabric surfaces which are identified as defining areas of each area,; doorways, window sashes, jambs & casing, and related trim; stairs, landings decks, metal ladders and railings. In all cases analysis should be performed prior to widespread removal of coatings or any application of new primers or finish coatings.

Refer to: GUIDELINES FOR PLANNING ARCHITECTURAL FINISHES.

★ **STANDARDS FOR TREATMENT:**
STABILIZATION / RESTORATION.

Specific Recommendations for Treatment: Page 31 of 36.

POINT PINOS LIGHTHOUSE

INTERIOR STONE-WORK

QCR- GOOD to POOR/ MDPR -MINOR to SERIOUS

Photo: IBW#1.

Note: While the overall condition of the interior stonework on the Point Pinos Lighthouse is rated with a QCR-GOOD and a MDPR of MINOR; there are exceptions to those ratings which are rated with a QCR of POOR and a MDPR of SERIOUS. The extent of damage could be established in most visible areas in the basement of the lighthouse. Those areas with the poorest rating had severe spalling of the plaster surface; loss of protective paint coating and water/moisture stains below ground level. A closer and more comprehensive inspection of the entire below grade exterior ground area will be required to establish extent and cause of moisture damage, a scope of work and better determine cost estimates.

Specific Recommendations for Treatment: Page 32 of 36 .

* Take plaster sample from area with loose plaster for testing to establish compression strength and composition.* If damaged area is opened up for further investigation and in order to expose stone substrate rack all loose mortar joints to remove mortar that has lost its integrity. * Mortar joints with a depth greater than 1/8th " should be repaired using mix of mortar with compatible compression strength and composition. A mortar color should be achieved to match as closely as possible the historic mortar color on surfaces which will not be re-coated. Contractor should provide a "mock up" test area prior to widespread re-pointing. Mortar joints with a depth greater than ¼ inch should be repaired using more than one lift of mortar so as not to apply mortar mix too thick. * Areas with extensive spalling of hardened face should be repaired rather than replaced. (Note: Exposed softer stone core will attract and retain moisture and result in additional damage to adjoining stone and mortar joints).* Replacement stone must match exactly historic stone in terms of color, strength, size, and texture.* In areas with loss of stone use same standards as those applied to replace extensively spalled stone.* In areas with structural cracks, rack cracks of loose debris. Fill cracks with compatible grout or approved elastomeric caulking. Note: This scope of work should be performed by qualified contractors.

AIR EXCHANGE AND VENTILATION OF INTERIOR OF LIGHTHOUSE

QCR-GOOD to FAIR/MDPR-MINOR to SERIOUS.

Refer to: Preservation Brief # 24: Heating, Ventilating ,and Cooling Historic Buildings; **Preservation Brief # 31:** Mothballing Historic Buildings.

Venting humid air from the interior of the lighthouse is crucial to preventing the collection of moisture which will cause mold, mildew and other damaging conditions including but not limited to damage to metal, brick and wood.. The lantern room has design features which provide for the air exchange in that space. Over the course of time the air regulators mounted on the interior lantern room wall and the cast iron vent ball on the exterior lantern canopy may become clogged with debris such as wasp, bird nest and metal debris. These systems should be checked to insure that they continue to function as they were designed and installed to do.

While the air exchange in the lantern room may still function properly, the issue of air exchanged must be examined throughout the interior spaces of the Point Pinos Lighthouse. If measures are taken to reduce the entry of moisture into the interior spaces by permanent or temporary means humid conditions will occur in interior spaces. Our site visit indicated evidence of mold and mildew staining several walls. It is important that all measures to make the lighthouse water -tight not produce conditions which trap moisture in the interior spaces without a means of periodically venting it out.

Frequent work activity will help reduce moisture retention in interior spaces with doors and /or other enclosures being held in an open position. Facilitate the function of the window systems to assist in the venting of air from interior spaces if temporary measures to enclose window openings are attempted.

Specific Recommendations for Treatment: Page 35 of 36 .

The issue of air exchange is more complex than comfort levels or mold and mildew contamination. Therefore, ambient temperatures and interior moisture conditions must be stabilized as evenly as possible.

Because of the complexity of air exchange inside the Point Pinos Lighthouse, we have recommended that specific phases and scope of work be performed if funding levels prevent the complete restoration of the lighthouse in one phase. We have recommended that Phase I - complete restoration of the lantern room to reduce moisture entry Recoating of the exterior masonry fabric to facilitate reduction of moisture entry into the porous brick fabric should be performed ASAP after other CRITICAL issues are corrected. Repair and restoration of the interior fabric should be delayed until air exchange and moisture issues are resolved on the exterior as damage will continue on the interior until those issues are resolved. Adequate time must be provided to thoroughly dry historic fabric prior to and steps to recoat.

SPECIAL SECURITY /SAFETY ISSUES*:*

Photo: SSSI -1:

A load-bearing test should be performed by a qualified structural engineer to determine the structural integrity of the masonry cylinder supporting the Lantern Room.

The existing concrete walkways are unstable and represent serious public safety issues for visitors, volunteers, and staff.

POINT PINOS LIGHTHOUSE

BRONZE LIGHTNING SUPPRESSION CABLE

QCR-POOR/MDPR-SERIOUS.

Crucial to the effective grounding and suppression of lightning strikes. It has not been determined as to the condition of the bronze lightning suppression cable which should be connected to the lightning rod attached to the "vent ball" at the top of the Lighthouse. The grounding cable would function to direct the destructive force of a lightning strike and reduce the amount of damage to the lighthouse.
Note: Have certified electrician test conductivity& ground of lightning rod.

★ **STANDARDS FOR TREATMENT:**

PRESERVATION / STABILIZATION / RESTORATION / RECONSTRUCTION

POINT PINOS LIGHTHOUSE

PRESERVATION PLAN.

SPECIFIC RECOMMENDATIONS FOR TREATMENT:

APPLICATION OF RECOMMENDED PRODUCTS:

MASONRY MATERIAL IN AND ON THE POINT PINOS LIGHTHOUSE:

CLEANING MASONRY SURFACES OF ACCUMULATED OLD COATINGS:

Refer to: Preservation Brief # 1: The Cleaning and Waterproof Coating of Masonry Buildings. **Preservation Brief # 6:** The Dangers of Abrasive Cleaning to Historic Buildings. **Preservation Brief # 38:** Removing Graffiti From Historic Masonry.

FOR SURFACES WHICH WILL NOT BE RECOATED:

Bi-carbonate of Soda Blasting: With special restrictions. Flare tip nozzle, low P.S.I. (less than 100); Nozzle must be kept at least 6" away from surface. Monitor workers with periodic unscheduled inspections to insure that protective measures are always adhered to. **(Note of Caution).** If Bi-Carbonate of Soda is used any migration of product will contaminate adjoining surfaces. Flushing all areas in contact with Bi- Carbonate residue with H20 several times will be required. Conduct PH test on all areas cleaned with Soda and do random testing of all areas in close proximity. Any contaminated areas not thoroughly neutralized will not be able to hold coatings and all applied coatings will fail as soon as humid levels or other forms of moisture serve as a catalyst to re-activate the Soda.

The use of Bi-Carbonate of Soda is a very controllable removable process when properly used. It can selectively remove layers of coatings leaving underlying layers of lead based coatings intact for encapsulation. **All product, residue, and waste must be contained, collected, and disposed of according to state of California and Federal laws.** Specific Recommendations /Application of Recommended Products: Page 1 of 11.

Peel- Away: With Special restrictions. All adjoining areas should be masked to prevent contact with product. Product will absorb into porous surfaces and result in great difficulty in attempts to neutralize the residue of the product. Product residue will cause subsequent yellowing and /or failure of applied coatings. This is a fairly controllable removal process which due to its " blanket " application technique can contain lead based coatings for easier collection. **All product, residue, and waste must be contained, collected and disposed of according to State of California and Federal laws.**

FOR SURFACES WHICH WILL BE RECOATED:

Sponge -Blasting: With special restrictions. Flare tip nozzle, low P.S.I. (less than 120). Nozzle must be no less than 6" from surface. This is a safe and highly effective means of removing accumulated coatings. It is labor intensive, uses complex equipment and expensive material. However, material can be re-used, does not contaminate adjoining areas, and does not require neutralization. With proper use, this is a very controlled removal process which can selectively remove layers of coatings leaving underlying layers of lead based coatings intact for encapsulation.

All product, residue, and waste must be contained, collected, and disposed of according to State of California and Federal laws.

Pressure Washing (Fresh water only): With special restrictions .Flare tip nozzle. Low P.S.I. under 100. Keep nozzle at least 6" away from surface. All residue and waste must be contained, collected, and disposed of according to local, State of California and Federal Laws.

COATINGS FOR EXTERIOR MASONRY SURFACES:

* For Surfaces intended to be or which have historically been coated.

Recommended Product.

Thoro Primer 1000

Thoro Sheen.

Two finish coats applied as per manufacturer's instructions. Perform Moisture meter test prior to any coatings. Range of test not to exceed 15. Closely monitor ambient temp and weather conditions. Keep daily coating activity log, recording specific weather conditions at time of applications and 24 hours thereafter.

Preparation: Refer to: Preservation Brief #1: The Cleaning and Waterproof Coating of Masonry Buildings. **Preservation Brief # 2:** Re-pointing Mortar Joints in Historic Brick Buildings.

Gentle hand scraping to remove loose debris, old coatings etc. Vacuum all areas prior to pressure washing and recoating. Gentle pressure washes all masonry surfaces with 10% chlorine and 90 % H20. Low P.S.I. Not to exceed 120. Flare tip nozzle not closer than 6" to surface. Allow 36-hour dry time depending on humidity. Re- test moisture range with Delmhorst Contractors Moisture Meter. To establish moisture level at time of application. Record information on daily log.

Areas of Application: Exterior masonry surfaces which have historically been coated. Finish coat colors to be based on coating color analysis and /or documentation of historic colors depicted during period of interpretation. (Some lighthouses have used numerous "day mark "colors during their history).

COATINGS FOR INTERIOR MASONRY SURFACES:

Recommended Product.

* For use on surfaces intended to be or which have historically been coated.

ACR 60

Thoro Coat.

** Do not use any textured coatings on surfaces which never had textured coatings.

Preparation: Refer to: Preservation Brief #1: The Cleaning and Waterproof Coating of Masonry Buildings; **Preservation Brief # 2:** Re-pointing Mortar Joints in Historic Brick Buildings , **Preservation Brief # 6:** Dangers of Abrasive Cleaning to Historic Buildings. **Preservation Brief # 38:** Removing Graffiti From Historic Masonry.

Areas of Application: Interior Surfaces which have historically been coated.

Two finish coats. First coat should be thinned by 25% volume with H20 to insure mill thickness allows for absorption into porous surface. (Rather than be too thick and caking on surface). Second coat full product. Gentle pressure washes all masonry surfaces with 10 % chlorine 90% H20. Low P.S.I. Not to exceed 60. Flare tip nozzle no closer than 6" from surface. Allow 36 hours dry time depending on humidity. Use Delmhordt Contractors Moisture Meter to establish moisture level at time of application. Record information on daily log. Finish Coat color to be based on coating color analysis and or other documentation to establish colors used during period of interpretation. Interior colors used by U.S. Lighthouse Service were different than those used by United States Coast Guard which took over U.S. Lighthouses in 1939.

FILLING CRACKS ON MASONRY SURFACES:

Recommended product.

Thorolastic knife grade or Thorolastic Brush Grade depending on width and depth of crack. Best used on hairline/ superficial cracks. Structural cracks require different procedure. **Refer to: Preservation Brief # 2:** Re-pointing Mortar Joints in Historic Brick Buildings.

METAL WORK IN AND ON THE POINT PINOS LIGHTHOUSE:

TREATMENT OF METALWORK WHICH CANNOT BE REMOVED FROM THE POINT PINOS LIGHTHOUSE BUT CAN BE CLEANED WITH ABRASIVE MATERIAL OR OTHERWISE CLEANED TO "WHITE METAL". THESE WOULD INCLUDE BUT NOT BE LIMITED TO ESPECIALLY HARD TO REACH AREAS SUBJECT TO EXTREME COASTAL CONDITIONS.

PERFORM THE FOLLOWING TREATMENT:

CLEANING METAL WORK:

Recommended Product.

Dry ice blasting

Sponge Blasting

Bi- Carbonate of Soda Blasting.

Peel Away Product.

Preparation:

Refer to: Preservation Brief # 6: Dangers of Abrasive Cleaning to Historic Buildings.

Preservation Brief # 27: The Maintenance and repair of Architectural Cast Iron.

Note of Special Concern: The use of any abrasive products can cause damage to historic fabric. There is special concern for soft material such as wood, brick and most stones and some metal. Adjoining areas must be protected. In the use of abrasive blasting always mask adjoining areas. (Preferably with sheet metal, use low P.S.I., use flare tip nozzle and maintain safe distance from surface. (No closer than 6"). Monitor workers with unscheduled inspections and closely examine all areas cleaned as well as adjoining areas on a frequent basis to insure no damage is occurring.

Safety measures must be enforced during the use of abrasive product as dust escaping from work area is of great concern to workers and the environment. While "negative "air conditions are often unrealistic, all attempts must be made to provide means of containing work area to prevent escape of product and product residue. These precautions are of utmost importance while working on and in the Point Pinos Lighthouse.

When using Bi- Carbonate of Soda: mask all adjoining areas to prevent migration of product dust/residue. Be mindful that if water is used to clean work areas contamination will occur wherever water comes into contact with residue.

When using Peel -Away: mask all adjoining areas to prevent migration of product. Keep in mind that all areas on which Peel Away comes into contact must be neutralized. Peel away is highly caustic. It will burn skin. Protective measures must be used to insure worker safety.

If Black Beauty is used: Keep in Mind that dust from this product will also contaminate adjoining areas and create a loss of coating adhesion and discoloration on surfaces.

Preparation (cont.) after thoroughly cleaning all metal surfaces according to specifications and after addressing any issues concerning proper neutralization of chemical cleaners used. Wipe all areas of contaminants with MRK or equal solvent to clean surfaces then apply MK 350 or Ospho after metal surfaces have been cleaned but before primer coat has been applied.

Recommended Product.

ZRC- Cold Galvanizing Compound. (Air Sprayed on hard to reach surfaces such as edge of stairs on wall side of stair system, between seams of deck plates and contact points on railing post and decks and along new weld areas as needed).

For areas with extensive surface pitting on metal which has been cleaned to “white metal” condition but which cannot be M.I.G. welded for repairs or removed from the Point Pinos Lighthouse: Apply

Recommended Product.

Metal Fill II product or Belzonia Product.

Preparation: Clean areas to be filled of all contamination and loose debris.

Aras of Application:

All exterior and interior metal- work which is fixed to the structure and cannot be removed for off -site cleaning, repair, and recoating. Exterior and interior decks tops and undersides, stairs, metal windowsills, headers, I beams, support brackets, and storm pane stiles.

Sealants for air spaces, gaps, and voids between metal components which may collect and hold moisture:

Product Recommended.

Tremco Spectrem I.

Preparation: Clean all areas to be filled of loose debris and contaminates.

Areas of Application: Exterior deck plate joints with separations

COATING SYSTEMS FOR EXTERIOR/INTERIOR METAL WITH HIGH CONTACT AND EXTREME EXPOSURE TO HOSTILE COASTAL CONDITIONS:

Product Recommended:

Glidden Glid Guard Corrosion Resistant Epoxy Primer. One coat must be used with Glidden finish Coats - Glidden #6200/52 Series Glid-thane polyurethane. Two coats applied 2 mils DFT per coat. Or:

Wasser Primer and Finish Coats:

All primer and finish coats must be applied according to manufacturer's specifications:

OTHER EXTERIOR FERROUS METAL SURFACES:

Glidden #5475/76 Glid Guard metallite Epoxy Mastic. One coat applied to 8 mils DFT.

Glidden #5410/14 Series Glid Guard High Solids Polyurethane. One coat applied to 4 mils DFT.

TREATMENT OF METAL WORK WHICH CAN BE REMOVED FROM THE POINT PINOS LIGHTHOUSE:

Preparation: According to manufacturer's specifications and the following:

After tagging all metal- work as to its place and location of origin in a manner that insures that information will not be lost during cleaning, repair and re-coating process, remove from site. Clean surfaces to "white metal" condition. Be clear with your contractor as to the standard of cleaning condition you expect prior to contract award. Once cleaned , recoat immediately to prevent surface oxidation flash which will contaminant surface and prevent adequate adhesion of coatings and/or cause rust bleeding later. Check for weather conditions during re-coating process to meet manufacture's requirements for warranty .There should be a concern with ambient temp and humidity. Metalize all metal which is removed from site for cleaning, repair, and re-coating. Use specified metal primers and finish coats based on historic paint color analysis.

Areas of Application:

Exterior safety rails, Lantern Room door, Soffits, Cornice, spanning plates between gallery support brackets where re-usable.

Product Recommended:

Glidden Glid Guard Corrosion Resistant Epoxy Primer. One coat must be used with Glidden Finish Coats. Or

Wasser Primer and Wasser Finish Coats.

BRASS METAL:

Quator Metal Polish.

Incralac Brass Protective. As a protective clear film to curtail oxidation- discoloration on brass surfaces after cleaning.

Preparation:

Gentle hand cleaning. Remove all loose debris, coatings, and contaminants.

Areas of Application: Bronze vent covers.

WOOD WORK IN THE POINT PINOS LIGHTHOUSE:

CLEANING ACCUMULATED COATINGS FROM WOOD FABRIC:

Preparation: Refer to Preservation Brief # 16: Historic Wood Windows. **Preservation Brief # 10:** Exterior Paint Problems on Historic Wood work. **Preservation Brief # 9**: The Repair of Historic Wooden Windows. **Preservation Brief # 37:** Appropriate Methods for Reducing Lead Based Paint Hazards.

Preservation Brief # 19: The Repair and Replacement of Historic Wooden Shingle Roofs.

Install collection system for loose paint coating debris.

Gently scrap all loose paint coatings. Gently sand all surfaces to remove loose coatings rough texture.

Product Recommended: Sure Klean. Apply according to manufacturer's specifications.

Areas of Application: Any wood surface which has a build- up of coatings which have varying degrees of integrity and /or surface uniformity. Must be rinsed with water only to neutralize Sure Klean residue.

COATING WOOD FABRIC:

Preparation: Refer to Preservation Brief # 16: Historic Wood Windows**. Preservation Brief # 10:** Exterior Paint Problems on Historic Wood work. **Preservation Brief # 9:** The Repair of Historic Wooden Windows. **Preservation Brief # 37:** Appropriate Methods for Reducing Lead Based Paint Hazards.

Sand all surfaces to smooth condition. Fill all holes, voids, cracks with approved wood filler. Sand surface treated with fillers to smooth condition. Apply approved primer and finish coat based on historic color analysis.

Product Recommended: Abatron Wood Filler and Epoxy. Glidden Coatings.

LANTERN ROOM STORM PANE:

REPLACEMENT MATERIAL RECOMMENDED:

Leaguer Laminates. To provide a measure of protection from bullets and storm damage.

Note of Concern: Carefully measure the dimensions of the storm pane openings and the width of the exterior bronze storm pane astragals as it relates to length of bolts used to secure battens to stiles and mullions. 5/8" lean may be maximum thickness allowed in order for bronze bolts to be used to re-install astragals. Due to absence of any astragals and probable deterioration of remaining ones condition, new custom bolts sized to proper length may be required. Regardless all stiles, mullions and other areas or surfaces which come into contact with Lexan must be thoroughly cleaned of any debris, loose scale or other contaminants prior to installation of storm panes. Apply layer of neoprene tape between storm panes and metalwork and between two dissimilar metals.

(For example contact between bronze and steel will result in a catalytic reaction and cause deterioration of the steel with resultant exfoliation and expansion of metal rust which will produce stress on the storm panes)Specific ecommendations Application of Recommended Products:

RECOMMENDED CONSULTANTS:

PAINT/COATING ANALYSIS:
FRANK WELSH
859 LANCASTER AVENUE
BRYN MAWR, PENN. 19010
(215) 525-3564

LENS REPAIR:
JOE COCKING-(904) 215-4035
1840 Copperstone Drive Building East
Orange Park, Florida 32003

NICK JOHNSON-(704) 855-2773
402 Haney Street
China Grove, NC 28023-2318

METALIZING:
BOB PONDSLER
WONDERLAND PRODUCTS
P.O. BOX 6074
JACKSONVILLE, FLORIDA 32236
(904) 786-0144

METAL CASTING;
FLO-TECH
3320 EVERGREEN AVENUE
JACKSONVILLE, FLORIDA 32206
(904) 358-1849

METAL FABRICATION:
ALEX KLAHM
15 - 8TH STREET NORTH
ST.PETE, FLORIDA
(727)-415-1674

LIGHTHOUSE CONTRACTORS:
INTERNATIONAL CHIMNEY CORP.
RICHARD YOUTZ
13 WOODBERRY WAY
GREENVILLE, SC 29609-1547
(864) 235-0090

LIGHTHOUSE PRESERVATION ARCHITECT:
KENNETH SMITH
8301 CYPRESS PLAZA DRIVE
SUITE 203
JACKSONVILLE, FLORIDA 32256
(904) 281-0002

BERT BENDER
720 CAROLINE STREET
KEY WEST, FLORIDA 33040
(305) 296-1347