

# HISTORIC LIGHTING RESTORATION & REPLICATION

## PART 1 – GENERAL

The purpose of this document is to specify the scope of work required for the restoration of existing historic lighting fixtures and the replication of others.

### 1.1 RELATED DOCUMENTS

- A. The provisions of the Contract Documents, Drawings & Instructions to Bidders, General Conditions, Supplementary Conditions, Alternates and Addendas apply to this Specification.

### 1.2 DESCRIPTION OF WORK

- A. Provide lighting fixtures as shown on the Drawings and identified as “historic lighting” and herein specified or scheduled.
- B. The work to be performed on this project shall include the restoration of existing historic fixtures and the replication of luminaires from both existing fixtures and from photographs, drawings, and historic information available, where actual luminaires do not exist.
- C. For new replications of existing and non-existing lighting, work shall include complete studies of photographs, drawings, and available historic information allowing concise preparation and design of engineering drawings with complete bills of materials for the fabrication of each fixture. All ornamental design, structural elements and component parts shall be fully detailed in addition to all anchoring support, wireway, and joinery conditions.
- D. Completed fixtures shall meet all applicable codes regarding materials and methods. All NEC guidelines and UL procedures shall be followed.
- E. Electrical contractor shall be responsible for verifying existing conditions and coordinate the mounting hardware with the manufacturer. It is the responsibility of the fixture manufacturer to ensure that all structural, mechanical, electrical, design, construction and fabrication of fixtures meet all applicable codes as related to public safety concerns. It is the responsibility of the electrical contractor to ensure that fixtures are safely installed with careful attention to fixture weight and mounting, lift and lowering devices and safety/seismic cables, where applicable.

### 1.3 QUALITY ASSURANCE

- A. New and restored historic light fixtures and assembled components shall be wired and tested in accordance with UL standards.
- B. Work on historic lighting shall be performed by a qualified Restoration and Replication Manufacturer with no less than ten years successful experience in comparable restoration and replication projects and employing personnel skilled in the restoration and replication processes and operations indicated. The Restoration and Replication Manufacturer shall provide proof of qualification.
- C. Qualification Data:
  - The Manufacturer shall submit qualification data as listed below, in their response to the request for bids, along with their itemized unit price quotation.
  - Data shall demonstrate manufacturer’s capabilities, experience and financial stability. It shall include a history of the firm, number of years the firm has restored and replicated historic lighting. Qualification data should include five projects within the last five years of similar scope and magnitude, photo documentation of completed work and project references.

#### 1.4 SUBMITTALS

- A. Refer to contract bid documents regarding shop drawings, product data, and samples, submission procedures.
- B. For custom replicated luminaires, submit shop drawings indicating all details of mechanical and electrical construction (including circuitry, lamping, ballasts, transformers, wireways, lampholders, etc.), diffuser assembly, mounting accessories and hardware, finishes and list of materials.
- C. For existing luminaires; Provide shop drawings for structural modifications only indicating the project name, manufacturer, all materials, finishes, lamping, voltage, ballast information and mounting details.
- D. Finish Samples: Samples of shades, glass diffuser material, metals and metal finish samples shall be submitted for approval prior to the notice to proceed with mock-ups.

#### 1.5 MANUFACTURERS MOCK-UPS

- A. The Manufacturer shall provide, access to the manufacturing plant for the project architect/engineer and owner project manager to review work in progress. The project architect/engineer and owner will coordinate these trips for timely review of work in progress.

#### 1.6 PRODUCT HANDLING – REMOVAL THROUGH INSTALLATION

- A. All costs for removing historic fixtures from existing locations, disassembly, packing, crating, insurance and freight for luminaires from the job site to the Manufacturer shall be the responsibility of the Electrical Contractor. The Electrical Contractor shall coordinate the removal and re-installation with other project contractors to insure convenience for all concerned. Packaging, crating, insurance and shipping of restored and replicated fixtures to the Electrical Contractor for re-installation shall be the responsibility of the Manufacturer. Installed fixtures shall be provided with protective covering until such time as the space is cleaned and ready for occupancy. The Electrical contractor shall be responsible for receiving, assembly and installation of both restored and replicated fixtures.
- B. The Electrical contractor shall be responsible for final lamping adjustment, luminaire adjustment and cleaning. The Restoration Manufacturer shall be on-site during fixture removal to assist with the photo-documentation of the existing condition, location, tagging and supervising the proper handling, disassembly, packing and crating of the historic lighting fixtures. When fixtures are re-installed, the Restoration Manufacturer shall again be on-site to supervise the proper handling, uncrating and assembly of the fixtures prior to their being installed by the Electrical Contractor.

## 1.7 GUARANTEE

- A. The Restoration Manufacturer shall furnish to the owner a written guarantee for luminaries against all defects in materials and workmanship, including without limitation, against failure to function, for one (1) year from date of acceptance.

PRODUCTS Lamps, ballasts, transformers, lampholders, as specified.

## 1.8 MATERIALS

### General:

Utilize materials to match the original or with matching equivalent physical characteristics of strength, finish, resistance to corrosion, etc.

Utilize gauges and thickness required to provide the appropriate structural performance and durability.

The restoration of existing luminaires shall consist of, electrical rewiring, new glass globes, cleaning and refinishing.

Physical restoration shall consist of the repair or replacement of any parts that are missing, broken, or damaged. Replacement shall match the original parts in strength and appearance, including degree of detail.

Electrical restoration shall consist of the replacement of all electrical components and wiring. Luminaires shall be wired with UL listed components and tested in accordance with UL standards.

## 1.9 STRUCTURAL MEMBERS

- A. All visible structural members shall be fabricated in the material used in the original or, in the case of luminaires based on photographs or drawings of the original, the material that would have been used in a quality luminaire at the time. Thickness and gauges shall be as required for structural integrity.
- B. All castings shall be free of pits, scratches, blemishes, parting lines, burrs and internal flaws.
- C. Assemblies of structural elements joined by soldering, brazing, or welding shall exhibit no external discoloration at the seams. External fasteners shall be finished to match the parts in which they are installed.

## 2.0 ORNAMENTAL MEMBERS

- A. Applied ornamental pieces (cast, spun, stamped or hand wrought) shall be of the material to which they were attached unless otherwise indicated by the originals or in the specifications.
- B. Applied ornamentation shall be attached using fasteners in discreet locations. Visible fasteners shall be finished to match the material into which they are set.

## 2.1 NEW FINISHES (New Luminaires)

- A. It shall be the responsibility of the manufacturer to research and propose the finish or combination of finishes to be employed on the luminaires. Finish shall be uniform, free of runs, specs, smudges, "checking", "rainbowing" or milkiness caused by humid environments. Manufacturer shall provide samples for approval of all finishes and materials to be used with the Shop Drawing Submittal.

- B. Existing luminaires shall be cleaned only and the existing patina appearance shall be retained were specified.

## 2.2 DIFFUSERS - GLASS

- A. Match the original diffuser-glass as shown in historic photos. It shall be the responsibility of the manufacturer to research and propose the diffuser. Manufacturer shall provide samples for approval of all finishes and materials to be used with the Shop Drawing Submittal.
- B. Match the existing in all aspects: size, thickness, material, color, surface texture design, etc. Shelf Stock: furnish additional diffusers for each fixture type, as specified.
- C. Replace the diffusers-glass on the existing luminaires to match the diffusers on the new luminaires.

## 2.3 REPLICATION LUMINAIRES

- A. The above contract documents define the required visual appearance and performance characteristics, which must be achieved in the existing replications. Variances will be considered only, if in the opinion of the architects, their consultants, and the project historians, they will achieve the desired appearance, quality of construction and performance.
- B. Lampholders shall hold lamps securely against vibrations and maintenance handling. For enclosed incandescent standard base lampholders, provide glazed porcelain, nickel-plated brass screw shell type lampholders. Other lampholders shall match the original or as specified. Decorative sleeves over lampholders should match the original.
- C. Wiring: Shall meet the applicable U.L. Standard and all local codes and the National Electrical Code. Exposed wire shall be of similar color to existing finish and be installed in such a manner as to be as invisible as possible. Wires through or along-side chain shall be threaded or attached by means of wire ties in such a manner that chains hang plumb and straight without crimping the wire at any point. The manufacturer shall coordinate with Electrical Contractor for any special wiring or attachment considerations (plugs, quickdisconnects, extra length, sleeving, etc.)
- D. Lamps: Shall be Phillips, General Electric, Osram Sylvania or approved equal.

## 2.4 FABRICATION

- A. Luminaires shall be free of light leaks and shall be designed to provide sufficient ventilation of lamps and ballasts, including vent holes where required.
- B. Lamps shall be oriented to provide the best light distribution, free of shadows or “hot” spots.
- C. Sheet metal work shall be free from tool marks and dents and shall have accurate angles bent as sharp as compatible with the gauges of the required metal. Intersections and joints shall be formed true and of adequate strength and structural rigidity to prevent any distortion after assembly. Sheet metal shall be free of light leaks. Edges shall be finished so there are no sharp edges exposed. Sheet metal work shall be properly fabricated and supported so that planes will not deform (i.e. become concave or convex, due to normal expected ambient and operating conditions).

EXECUTION

2.5 GENERAL

- A. Blemished, damaged, or unsatisfactory fixtures shall be replaced in a timely and satisfactory manner.

END OF SECTION