



## Interior goals and criteria

*Prepared by: Office of Management and Enterprise Services, Mass Architects Inc.*

To begin the process of repairing and restoring the interior of the State Capitol, a list of goals and criteria must be established. The comprehensive list that follows is based upon the findings in the 2010 Historic Conditions Report, as well as additional needs determined through subsequent evaluation by the Office of Management and Enterprise Services and Mass Architects Inc. This list should not be confused with the scope of work for the project, which will be determined later.

Some of the goals in this document may not be achievable in the immediate future due to time and cost constraints. Nevertheless, to begin the process of choosing a design-build vendor, a broad list of goals and criteria should be determined to secure a contractor with the appropriate skills and experience.

### Infrastructure and Systems

- 1. Goal: Replace nonfunctional, deteriorated plumbing** (2010 Historic Conditions Report)  
*Replace degraded, out-of-service, deteriorated or noncompliant plumbing in the building.*

**Criteria:**

- Ensure work completed enhances the original historic nature of the building.
- Replace below-grade sanitary waste and vent piping in addition to domestic hot and cold water piping.
- Replace existing plumbing fixtures (water closets, urinals, lavatories, sinks, etc.) to meet current codes and standards.
- Replace leaking or degraded roof drains and piping.
- Replace degraded vitrified clay tile storm drain piping outside the building.
- Upgrade existing dewatering sump pumps in the basement and add additional sump pumps as necessary.

- 2. Goal: Restore and replace electrical system** (2010 Historic Conditions Report)  
*Replace all degraded, out-of-service, deteriorated, or noncompliant electrical infrastructure and work to improve energy efficiency.*

**Criteria:**

- Ensure work completed enhances the original historic nature of the building.
- Provide new electrical devices, cover plates, wiring, etc., as required by architectural modifications to the building.
- Ensure aesthetic aspects of the electrical equipment provided are fully coordinated with the architectural scheme for the spaces.
- Provide power, devices, connections, etc., as required for new mechanical equipment.
- Provide power as required for owner-provided equipment.
- Conduct an overall fault current/coordination/arc-flash hazard study for the newly designed electrical system during the design phase with all selectable breaker settings specified and update the study following final installation to reflect actual as-built conditions.



- Provide arc-flash hazard labels for all electrical equipment.
- Upgrade existing electrical rooms and electrical equipment so that codes (mandated clearances, working spaces, egress, etc.) are met for electrical distribution systems and grounding.
- Evaluate the condition of feeders and feeder busways extending to the upper floors.
- Replace all feeders that are in poor condition, undersized or otherwise damaged.
- Evaluate the condition of branch circuits and replace all conductors that are in poor condition, undersized or otherwise damaged.
- Replace all cloth-covered wiring.
- Evaluate the condition of all electrical panel boards and equipment located throughout the spaces on each floor and replace all that are in poor condition, undersized or otherwise damaged.
- Ensure that all electrical equipment is installed with adequate clearance, working space and egress as required by codes.
- Evaluate the condition (or existence) of the grounding system in the building and ensure that a full grounding system is in place.
- Remove the existing 230V-distribution system that was left in place to serve the elevators and revise or replace elevator equipment as necessary in order to change to 480V-distribution system.
- Evaluate condition of the existing lightning-protection system and upgrade as required while ensuring the lightning-protection system is fully bonded to building-grounding system.

### **3. Goal: Install emergency power (2010 Historic Conditions Report)**

*Analyze the need for an emergency power system and install generators if necessary.*

#### **Criteria:**

- Evaluate the various systems to verify which should be backed up by the generator while ensuring all life-safety systems are backed up by the generator.
- Coordinate with building stakeholders to provide emergency power for other optional systems from a separate automatic transfer switch.
- Provide emergency lighting throughout the building powered by the generator and in accordance with current codes.
- Provide exit signage throughout the building that is consistent in appearance, powered from either emergency generator or battery backup, and in accordance with current codes.
- Provide battery backup for elevators, elevator lighting, and elevator controls (or generator power as required by code).

### **4. Goal: Install Uninterruptable Power Supply (UPS) system**

*Analyze the need for UPS system and install, if necessary.*

#### **Criteria:**

- Evaluate the large battery room in the basement data center for all current life-safety related issues such as ventilation, hazardous area rating, fire alarm, and suppression, etc.
- Evaluate whether a new UPS system should be provided and consider the use of a flywheel type system if it meets the needs of building stakeholders.
- Provide power to this area from the new emergency generator, if required.



**5. Goal: Install updated lighting and lighting controls** (some criteria discussed in 2010 Historic Conditions Report)

*Analyze the existing lighting system and upgrade for use and efficiency.*

**Criteria:**

- Design new lighting and lighting control systems to meet IECC 2009 to the maximum extent possible and provide individual space lighting controls in accordance with IECC 2009.
- Ensure all lighting color selections, including color rendering index and color temperature, are fully coordinated with architectural selections.
- Provide appropriate lighting on all artwork to include paintings, monuments and sculptures.
- Provide a programmable lighting-control system for all common areas and building exterior.
- Evaluate various options to determine the most energy efficient type of lighting and replace interior and exterior lighting as recommended.
- Provide scene-based lighting controls and dimming systems for Senate and House chambers, and evaluate other areas in the building that would be well-served by this type of system.
- Coordinate with architect to provide a method for re-lamping all fixtures with new fixtures that provide a very long lamp life, particularly in traditionally non-accessible portions of the building that prevent regular re-lamping.
- Install historic light fixtures in historic preservation zones.

**6. Goal: Improve heating ventilation and air conditioning** (2010 Historic Conditions Report)

*Evaluate and improve the function of the HVAC systems in the building.*

**Criteria:**

- Ensure work completed enhances the original historic nature of the building.
- Identify areas that are not currently climate controlled and provide the proper HVAC for those areas.
- Identify areas with inadequate or malfunctioning HVAC and replace or upgrade those systems as necessary to meet requirements for current and future space utilization.
- Verify that existing HVAC systems comply with current building codes and upgrade or replace HVAC systems to meet the standards of ASHRAE 90.1 and 62.2.
- Verify proper operation of existing HVAC controls (control valves, dampers, electronics, etc.) and replace or upgrade those controls as necessary.

**7. Goal: Improve elevators** (2010 Historic Conditions Report)

*Replace and upgrade elevators to a historically sympathetic modern elevator design that works faster and serves a higher occupant load.*

**Criteria:**

- Replace elevator cabs with a modern, but aesthetically appropriate, design.
- Install new controls, motors, and operational elements to provide for more efficient operation and use.
- Install new ADA-compliant elevator hardware, including an audible signal.



## **8. Goal: Upgrade information technology and security systems**

*Provide a historically appropriate, but enhanced, Information Technology infrastructure for support of current and future technology needs including business, guest services, access control and advanced security systems.*

### **Criteria:**

- Remove all exposed cabling throughout the building. All cabling shall be installed in cable tray or conduit. All cabling shall be concealed. If no other method exists for concealing the cabling, a surface raceway may be used. All use of surface raceway shall be fully compatible with architectural appearance of the space.
- Hide exposed wiring and equipment for data, security, and power.
- Provide new telecommunications service, audio-visual equipment and information technology infrastructure to renovated spaces as required in coordination with state IT personnel to verify type of cabling and connections desired.
- Coordinate with state security personnel for required revisions and upgrades to the security system.
- Relocate security cameras to locations that offer better coverage of the building and do not detract from historic architecture.

## **Historic Restoration and Preservation**

## **9. Goal: Enhance historic character (2010 Historic Conditions Report)**

*Ensure construction plans are appropriate for historic application and, if possible, remove non-historical or poorly conforming renovations made in the past.*

### **Criteria:**

- Ensure work completed enhances the original historic nature of the building.
- Establish preservation zones within the building with guidelines and design standards for all future construction or repair in those areas.
- Unify the building with appropriate and consistent historic and design criteria.
- Establish criteria and recommended proper locations for signage, clocks, fire extinguishers and other miscellaneous items in a manner that respects and enhances the historic nature of the building.
- Remove or modify areas that were poorly remodeled in the past, causing an erosion of the historic nature of the building.
- Ensure security stations at entrances are better integrated into the historic character of the building.
- Re-open and re-establish the south grand entry as the building's ceremonial entrance during visiting hours.



**10. Goal: Improve historic aesthetics and establish a master plan for efficient use of space**  
(some criteria discussed in 2010 Historic Conditions Report)

*Establish consistency of historical design and revisit the space utilization plan for optimum efficiency.*

**Criteria:**

- Develop appropriate historic displays for artifacts.
- If possible, remove drop ceilings and expose original vaulted ceilings.
- Remove exposed phone and communication wiring inappropriately installed over the past 80 years.
- Re-establish the use of historic doors and frames and remove poorly conforming openings that have been cut into historic areas.
- Establish a consistent door hardware standard that is historically sympathetic to the building.
- Establish storage areas and staff work rooms to remove clutter (tables, chairs, copy machines, water coolers, etc.) from hallways and corridors.
- Renovate the ceremonial spaces such as the Blue Room, Governor's Large Conference Room, legislative chambers, Supreme Court chamber and conference rooms to better reflect the historic nature of the space and for enhanced function.
- Renovate bathrooms where required in a historically sympathetic manner that is ADA compliant.
- Replace damaged and cracking flooring in the basement and repair areas in which the flooring and base is failing, severely worn, or poor in historic appearance.
- Remove all 1960s-era wood paneling.
- Install period-appropriate furnishings in the public spaces.

### **Structure and Safety**

**11. Goal: Ensure structural integrity**

*Repair all damaged components of the building structure, reinforce marginal elements, and establish a baseline for seismic alterations or repairs.*

**Criteria:**

- Analyze structural elements to determine whether the structure is serviceable for an extended period of time.
- Complete a seismic study and reinforce the building to better withstand seismic activity.
- Survey building slab for structural integrity and repair as required.
- Repair damaged columns or beams.
- Replace damaged gypsum plank decking in roofing that is falling on stained glass.

**12. Goal: Prevent water infiltration** (2010 Historic Conditions Report)

*Repair all building roofs, walls and foundation to stop water intrusion and its damaging effects.*

**Criteria:**

- Repair below grade items to a water-tight condition.
- Repair damaged granite steps and associated items.
- Replace damaged finishes in areas of repair.
- Identify and repair areas of damaged foundation or below grade wall cracks as allowable.



- Replace accessible below grade water-proofing.
- Repair basement structural areas damaged by water infiltration.

**13. Goal: Remove hazardous material**

*Remove and dispose of hazardous materials encountered.*

**Criteria:**

- Remove asbestos-containing materials encountered and repair associated finishes.
- Identify, remove or encapsulate lead paint encountered.

**14. Goal: Ensure the health, safety and welfare of building occupants**

*Where possible, improve the existing life safety conditions with regards to building code compliance.*

**Criteria:**

- Install fire sprinklers throughout the building to achieve reasonable compliance with code.
- Establish exit pathways to limit dead-end corridors to improve fire safety.
- Identify corridors with little or no fire exit access and improve by redesign or marking as noncompliant and not to be used in a fire emergency.
- Establish a method to improve smoke containment or limit smoke passage between floors at stairwells.
- Ensure proper exit hardware is installed at all exterior exit doors.
- Install appropriate signage for navigating out of the building in case of emergency.
- Install a fire-alarm system.

**15. Goal: Improve disability access**

*In all areas where it is reasonable and possible, improve the ability of those with disabilities to circulate throughout the building.*

**Criteria:**

- Refurbish bathrooms for full accessibility in historically appropriate character.
- Replace noncompliant hardware at doors, toilets and other areas.
- Ensure work completed is compliant with ADA.
- Replace noncompliant drinking fountains with accessible units.
- Install ADA-compliant signage throughout the building.