

COUNTY OF LANCASTER, PA COUNTY COURTHOUSE DOME

LANCASTER COUNTY COMMISSIONERS

CONDITIONS ASSESSMENT

Summary Presentation

19 November 2014

SUMMARY PRESENTATION

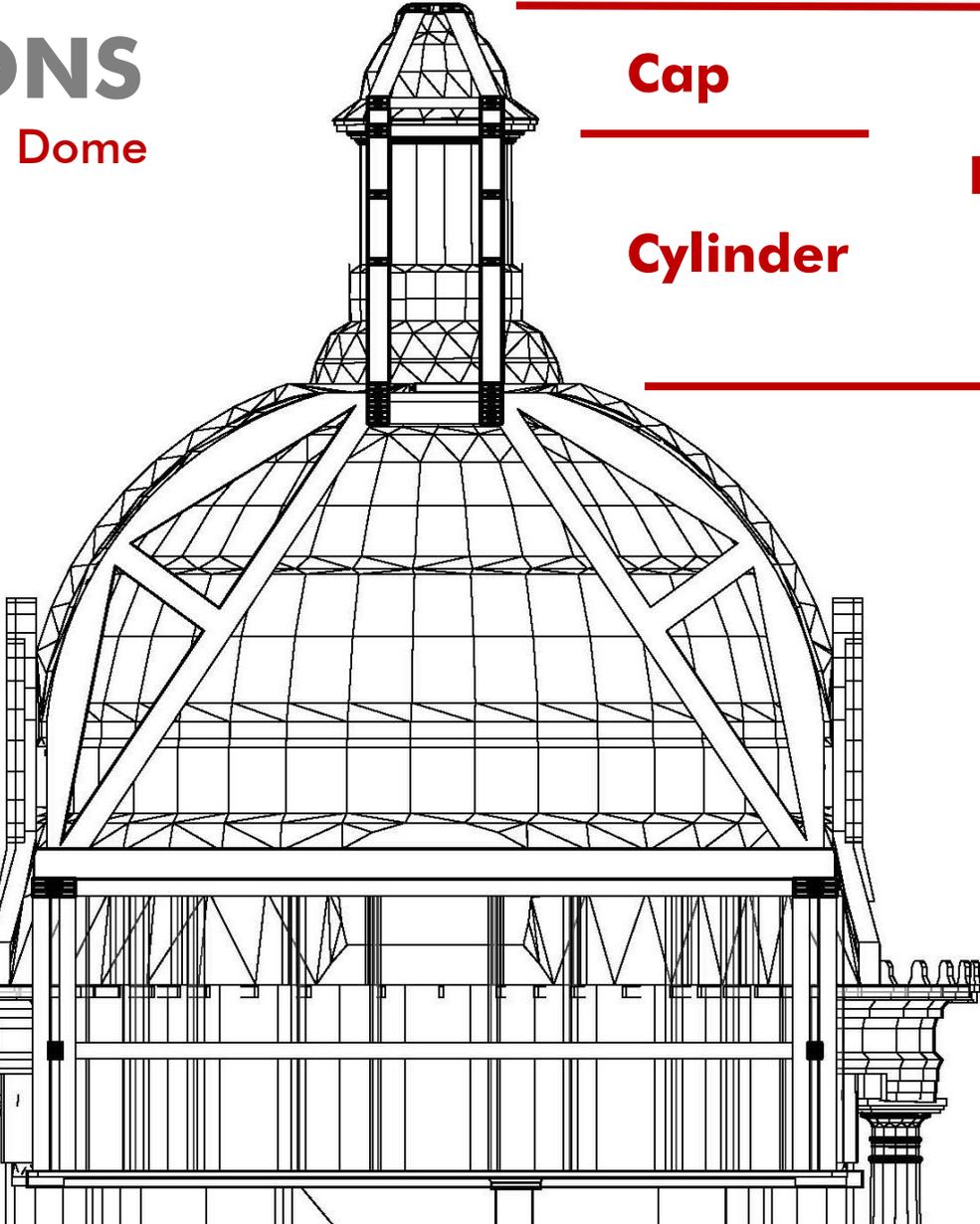
County Courthouse Dome

AGENDA

- Describe what we have observed
- Define the current condition of the Courthouse Dome
- Discuss restorative procedures, expectations, and cost

DEFINITIONS

County Courthouse Dome



Cap

LANTERN

Cylinder

DOME

Ledge

ENTABLATURE

PORTICO

OBSERVED CONDITIONS

County Courthouse Dome

STRUCTURE

FRAMING

County Courthouse Dome

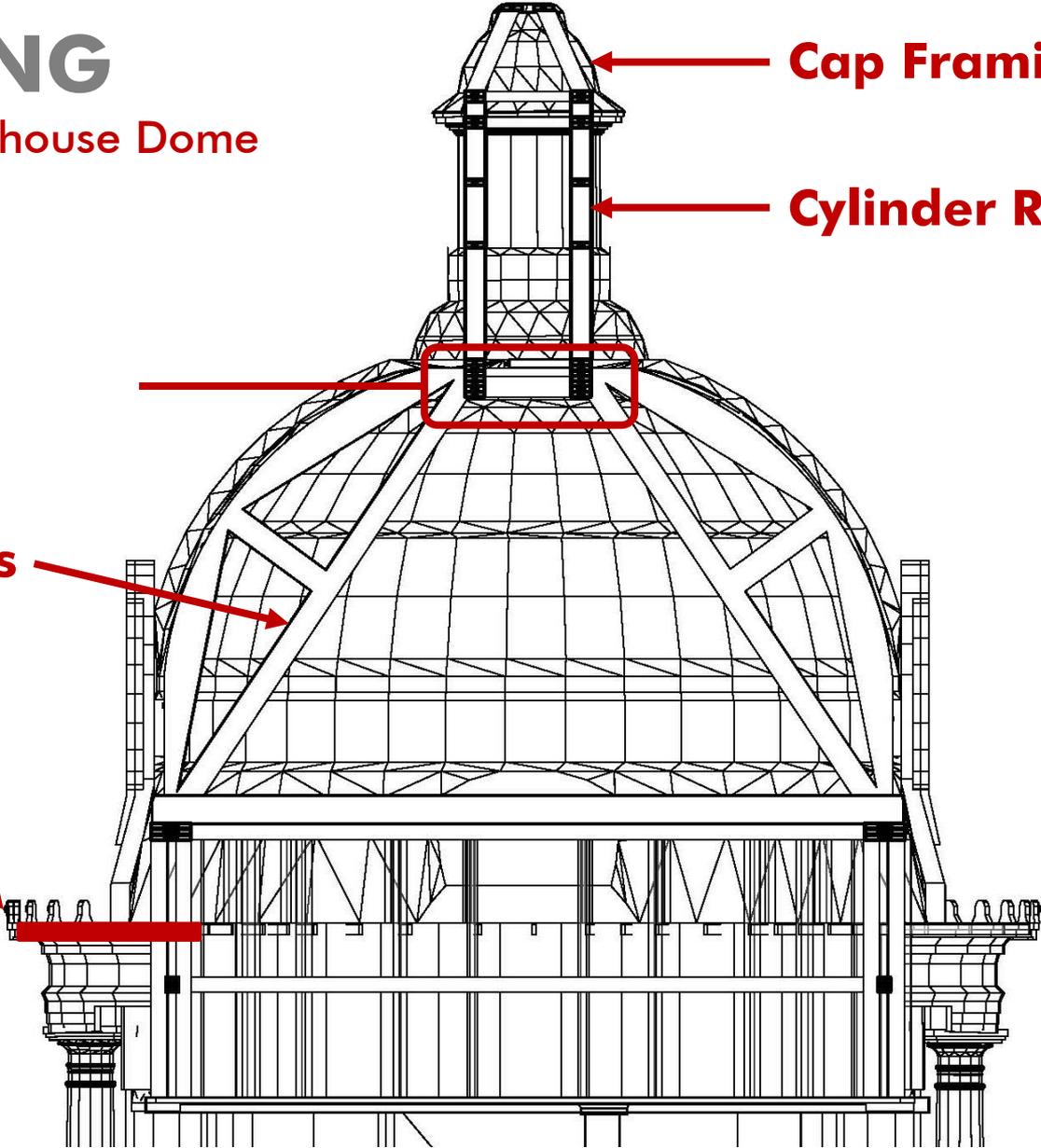
Cap Framing

Cylinder Rib

Compression Ring

Dome Trusses

Ledge Outrigger



OBSERVED CONDITIONS

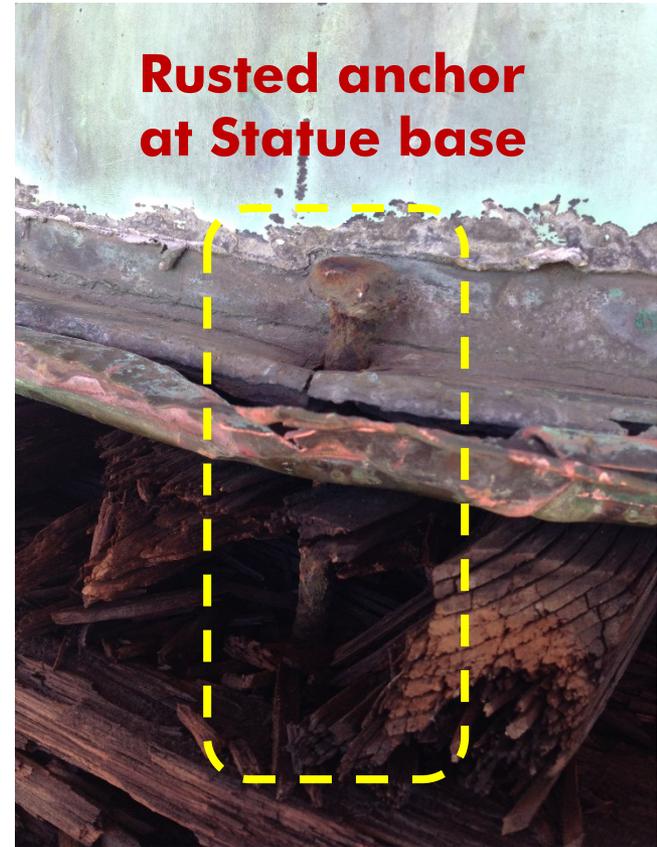
County Courthouse Dome



CAP FRAMING

OBSERVED CONDITIONS

County Courthouse Dome



CAP FRAMING

OBSERVED CONDITIONS

County Courthouse Dome



CAP FRAMING

OBSERVED CONDITIONS

County Courthouse Dome



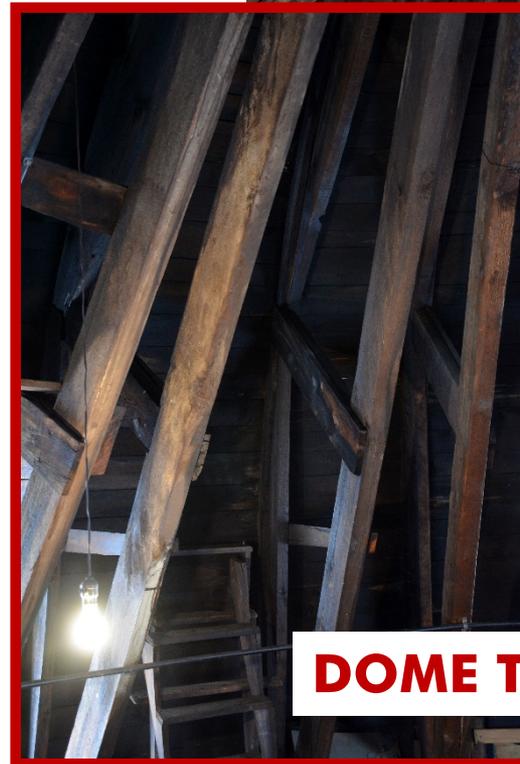
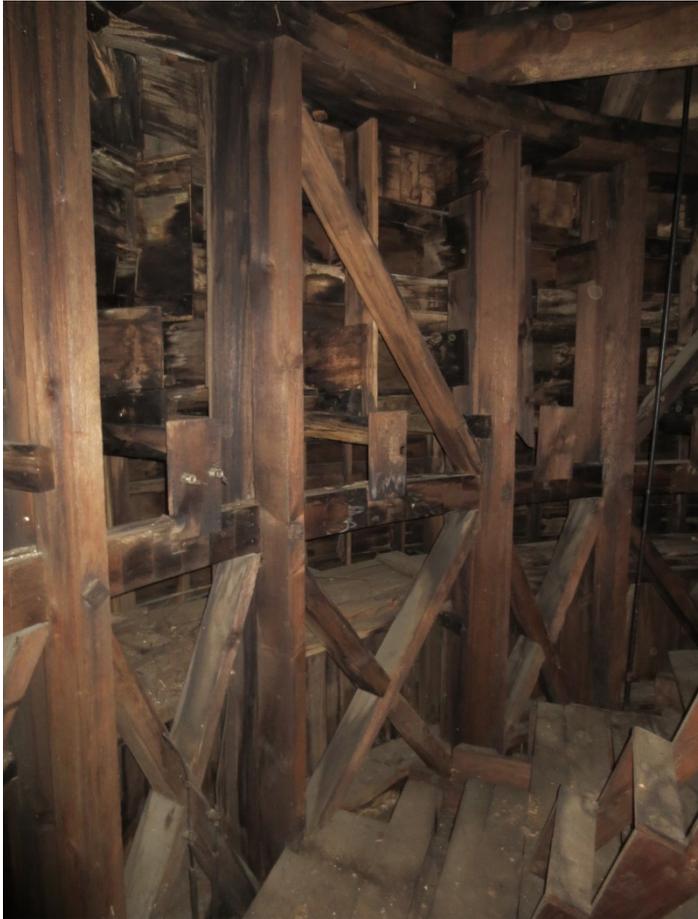
CYLINDER RIBS



COMPRESSION RING

OBSERVED CONDITIONS

County Courthouse Dome



DOMES TRUSSES

OBSERVED CONDITIONS

County Courthouse Dome



LEDGE FRAMING



OBSERVED CONDITIONS

County Courthouse Dome



LEDGE OUTRIGGER

OBSERVED CONDITIONS

County Courthouse Dome



Deteriorated Wood Deck

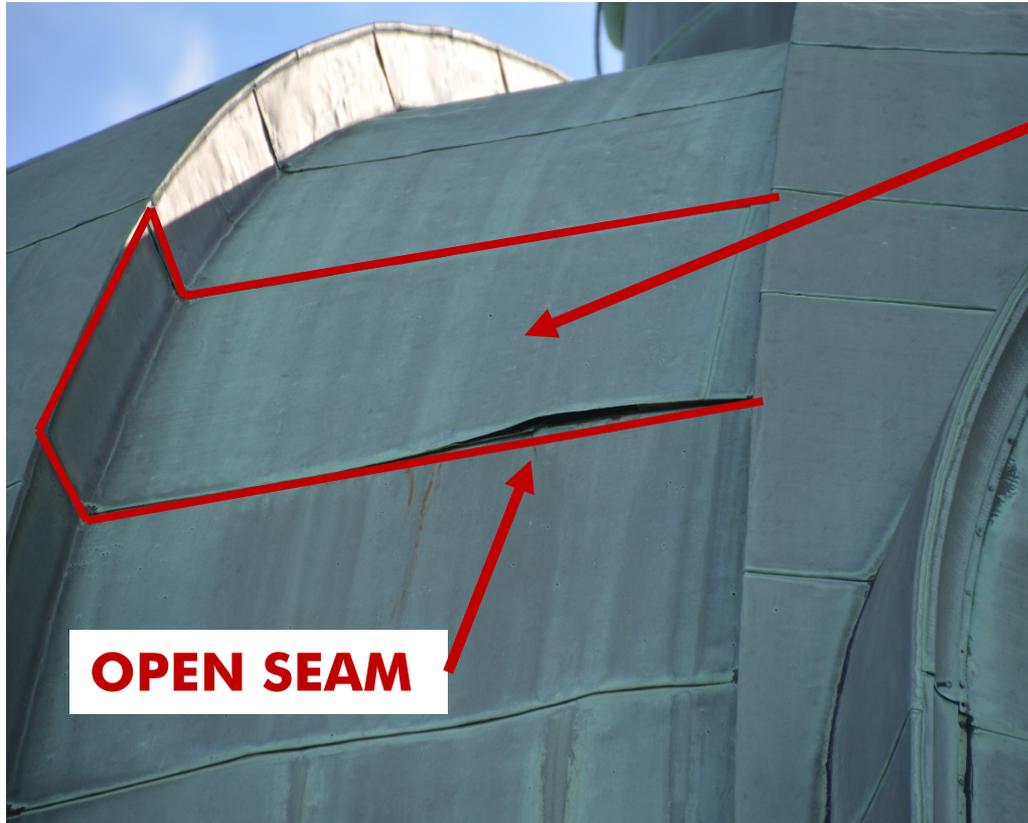
OBSERVED CONDITIONS

County Courthouse Dome

COPPER ROOFING

OBSERVED CONDITIONS

County Courthouse Dome



OPEN SEAM

COPPER PAN:
Individual piece
of copper
roofing.

*The copper pans
on this roof are
2-3 times larger
than they should
be for this type of
roofing system.*

OBSERVED CONDITIONS

County Courthouse Dome



**Water infiltration
at base of Statue**

**Rust staining
on Cylinder**

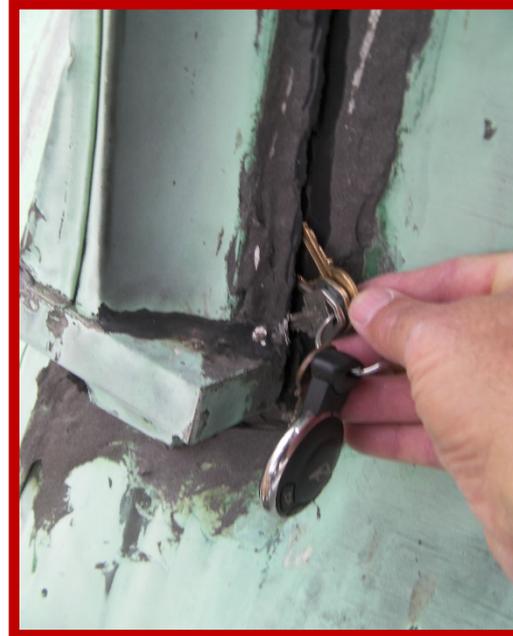


OBSERVED CONDITIONS

County Courthouse Dome



FAILED REPAIRS



OPEN SEAMS



TORN COPPER

OBSERVED CONDITIONS

County Courthouse Dome



FAILED REPAIRS



TORN COPPER

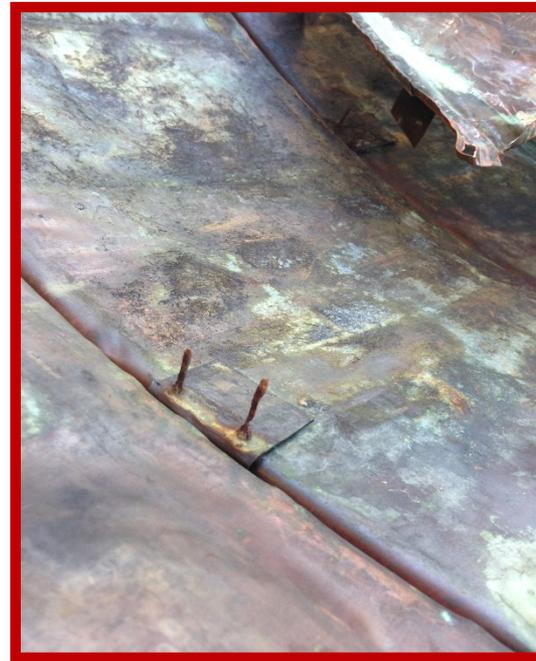
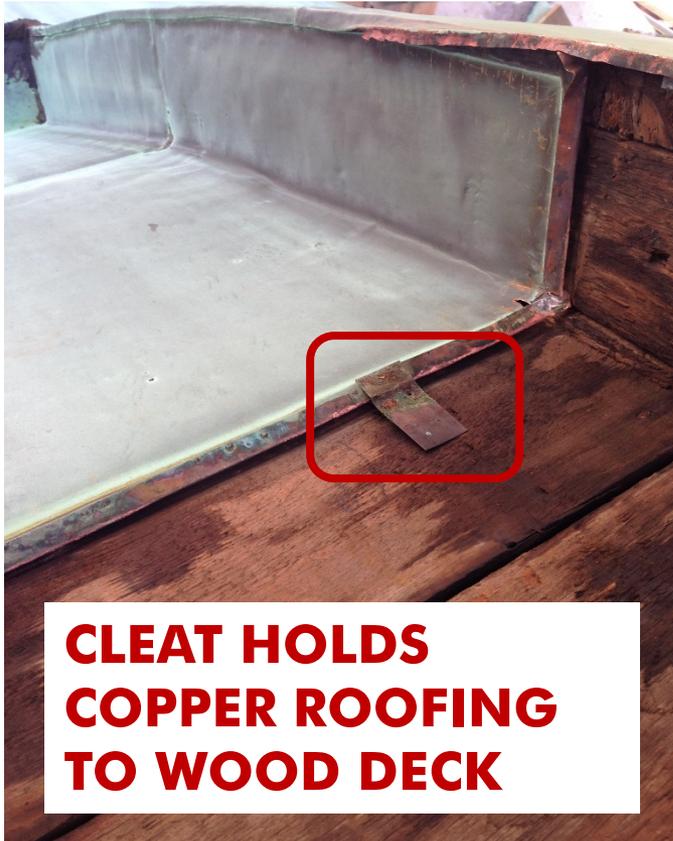
OBSERVED CONDITIONS

County Courthouse Dome

**THE OPEN SEAMS, FAILED REPAIRS,
AND TORN COPPER ALLOW
LONG-TERM WATER INFILTRATION**

OBSERVED CONDITIONS

County Courthouse Dome



CLEAT NAIL DETERIORATION

OBSERVED CONDITIONS

County Courthouse Dome



ROTTED WOOD DECK



UNSUPPORTED COPPER



OBSERVED CONDITIONS

County Courthouse Dome



ROTTED WOOD DECK

OBSERVED CONDITIONS

County Courthouse Dome

SUMMARY OF OBSERVED & UNFORESEEN CONDITIONS

Excessively large copper pans...

causing seam overstress that leads to tears and open joints...

combining with failed repairs made with incompatible materials...

facilitating long-term water intrusion...

eroding copper roofing fasteners...

and rotting wood structural framing and decking.

CONCLUSIONS

County Courthouse Dome

PRIMARY DEFICIENCIES:

Water infiltration through open joints, failed seam repairs, and torn copper.

Compromised connection between the copper roofing and the wood deck, and between the wood deck and the structural framing.

Structural deterioration due to water leaks.

LIMITED RESTORATION – OPTION 1

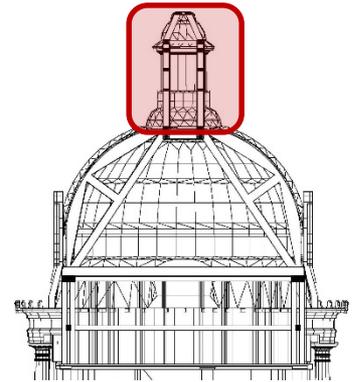
County Courthouse Dome

Minimally invasive.

Corrects only some of the observed failures.

Leaves many defects in their current condition.

Is not a long-term solution.



- ✓ Remove and rebuild the Cap structure and deck
- ✓ Repair the wood on top of the Dome Compression Ring
- ✓ Replace decking on Cylinder
- ✓ Install new copper roofing on Cylinder and Cap
- ✓ Reinstall Lady Justice with new base-to-Cap detail to mitigate water infiltration
- ✓ Replace missing fasteners in ornamental copper components

***DOES NOT ADDRESS THE PRIMARY DEFICIENCIES
ON THE MAIN DOME AND LEDGE***

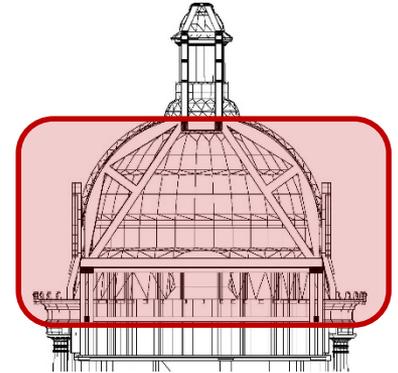
COMPREHENSIVE RESTORATION – OPTION 2

County Courthouse Dome

Correct the problems and failures that we have observed.

Provides watertight roofing system.

Expands on the corrective work in Option 1 by:



- ✓ Removing the remaining copper from the Ledge soffit to the top of the Dome
- ✓ Either repairing/refastening or replacing all of the wood decking
- ✓ Repairing framing damage to structural members and deck supports
- ✓ Repairing/rebuilding the entire Ledge structure including the soffit, fascia and decking
- ✓ Installing waterproofing membrane/underlayment over the entire structure
- ✓ Installing new copper roofing system to meet modern performance standards
- ✓ Replicating, as needed, and reinstalling all of the ornamental copper

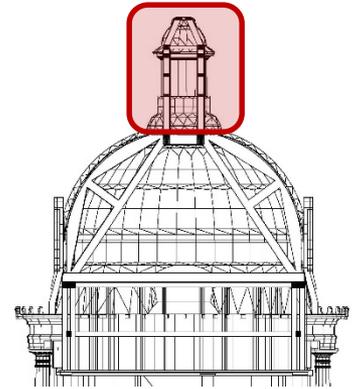
RESTORATION OPTIONS

County Courthouse Dome

COST DISCUSSION

RESTORATION OPTIONS

County Courthouse Dome

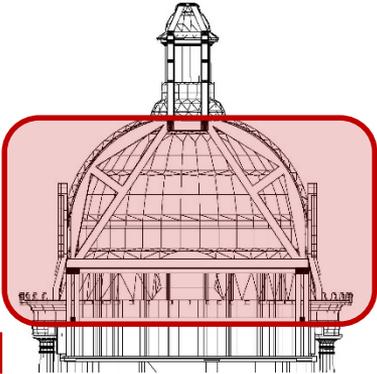


OPTION 1 – LIMITED RESTORATION

<i>Approved Budget</i>	<i>\$ 500,000</i>
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Option 1 Restoration Work (Copper on Cap & Cylinder, structure repairs, scaffolding)	\$ 228,000
Soft Costs	\$ 147,840
<u>Lady Justice Restoration</u>	<u>\$ 75,000</u>
Sub-Total Option 1	\$ 450,840
Additional Work required to complete Option 1 (Discovery of unforeseen conditions and additional scaffold)	\$ 68,400
Total Option 1	\$ 519,240

RESTORATION OPTIONS

County Courthouse Dome

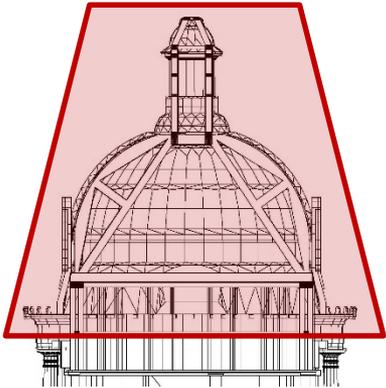


OPTION 2 – COMPREHENSIVE RESTORATION

Option 2 Restoration Work (Copper on Dome and Ledge, new deck & structure repairs)	\$ 790,000
Soft Costs	\$ 189,600
<u>Clock Face Restoration & Waterproofing</u>	<u>\$ 25,000</u>
Total Option 2	\$ 1,004,600

RESTORATION OPTIONS

County Courthouse Dome



OPTION 1 & OPTION 2 - SUMMARY

Total Option 1	\$ 519,240
<u>Total Option 2</u>	<u>\$ 1,004,600</u>
Total Project Option 1 & Option 2	\$ 1,523,840

SUMMARY PRESENTATION

County Courthouse Dome

QUESTIONS