



# MINNESOTA STATE CAPITOL RESTORATION

ST. PAUL, MINNESOTA

# OCTOBER 1, 2007 LCC MEETING

## Explore a “Phase I Mechanical Vault” solution

- Provide new underground mechanical vaults to tie new systems into the existing building
- Achieve the following objectives:

*Reduce Phase I Cost*

*Maximize Phase I value*

*Improve security & systems reliability*

*Satisfy long-term maintenance needs*

*Control building deterioration*

*Achieve greater energy efficiency*

*Ensure sustainability*

*Minimize disruption to existing building and occupants*

# FINDINGS

Certain systems can be upgraded and integrated within the existing building and others can be installed in preparation for future phases

- *Security – Visitors and vehicles*
- *Existing mechanical equipment stabilization*
- *Higher voltage switchgear*
- *New fire pump*
- *New heating water pumps*
- *Telecom front-end equipment*
- *New roof*
- *Humidity mitigation in Rotunda*

# FINDINGS

Other systems **cannot** be upgraded and integrated within the existing building:

- *New HVAC air systems cannot be connected to existing ductwork*

*New HVAC design provides significantly greater air flow which requires larger, higher pressure, stronger ductwork*

*New HVAC system temperature controls are not compatible with the current controls*

- *New, upgraded electrical power service*

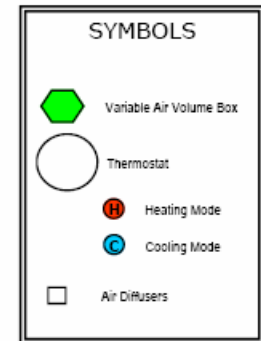
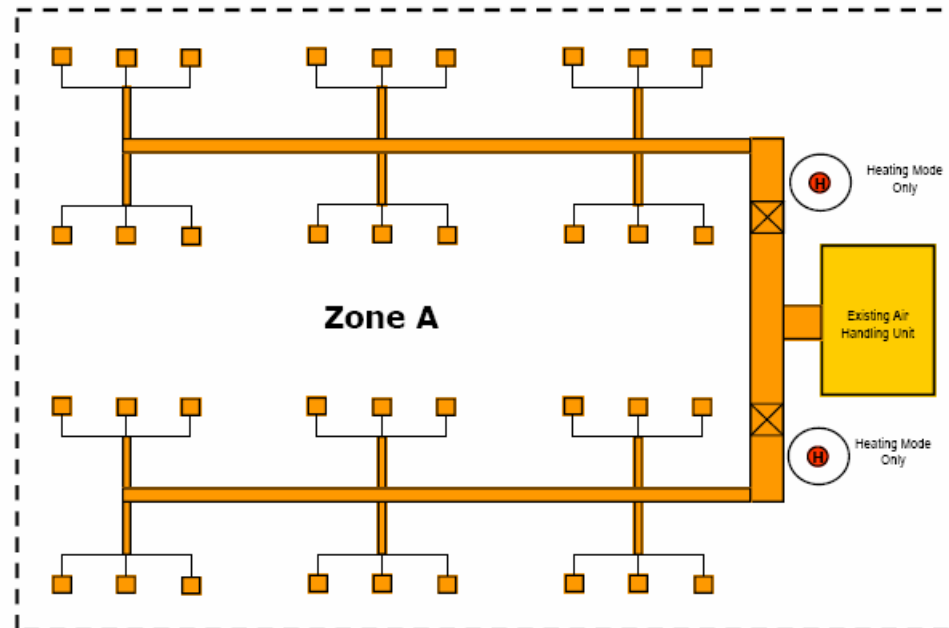
*All existing lighting is 120 volt – needs to be upgraded to 277 volt*

*Existing equipment is currently 208 volt – needs to be upgraded to 480 volt (elevators, pumps, fans, etc.)*

*Existing power boards & circuit breakers are not rated for higher voltages*

# HVAC SCHEMATICS

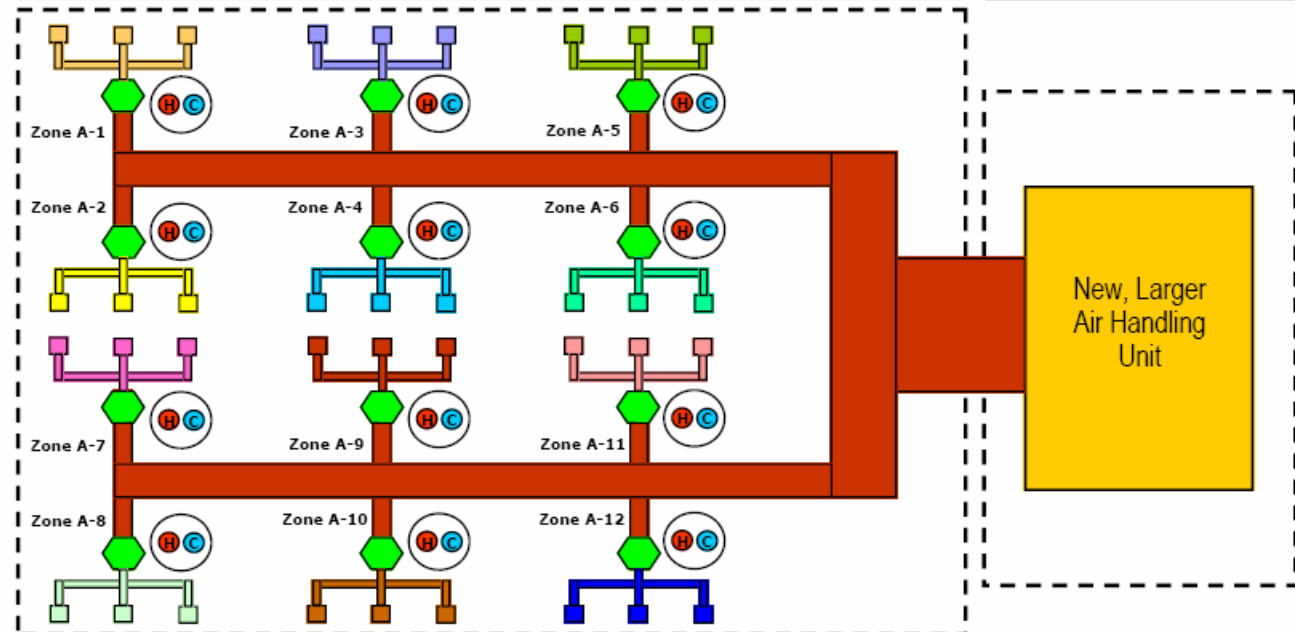
Current Situation  
through Phase I



CAPITOL BUILDING

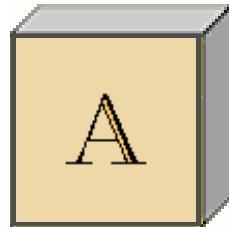
EXTERIOR VAULT

Future Upgrades  
Phases II—IV

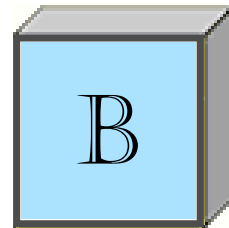


# PHASED CONSTRUCTION STRATEGY

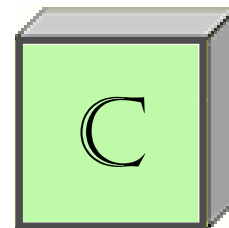
Building blocks in the restoration of the Minnesota State Capitol



ACCESS,  
SECURITY  
and  
LIFE SAFETY



BUILDING  
SYSTEMS



CONSERVATION

## ACCESS, SECURITY & LIFE SAFETY

### HIGHEST PRIORITY VULNERABILITIES

- New Relocated, Secure Main Entry
- Full Vehicular Stand-off
- Improved Air Intake Security
- Secure Dock & Drop-off
- Visitor Accommodations including ADA accessible restrooms

## BUILDING SYSTEMS

### STABILIZE AND PREPARE SYSTEMS

- Mechanical Systems repair/replacement
- New Fire Pump
- New Electrical Service
- New Telecom Head-in
- New Chilled Water Pumps
- New Heating Water pumps
- Rainwater Cistern

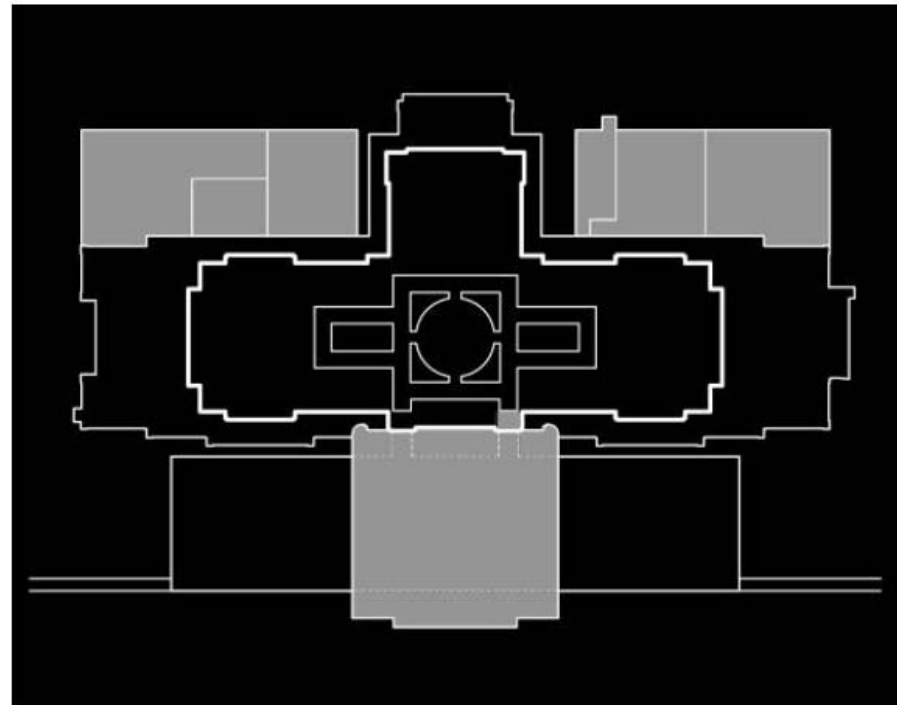
## CONSERVATION

### CONTROL DETERIORATION

- New Roof
- Dome & 3rd Floor Humidity Mitigation
- Exterior Plaza/Site Restoration
- Swing Space Decision/Design

## PHASE I

### North Vaults and South Stairs



### CONSTRUCTION TIMETABLE

2009 – 2011

### PRELIMINARY ESTIMATED COST

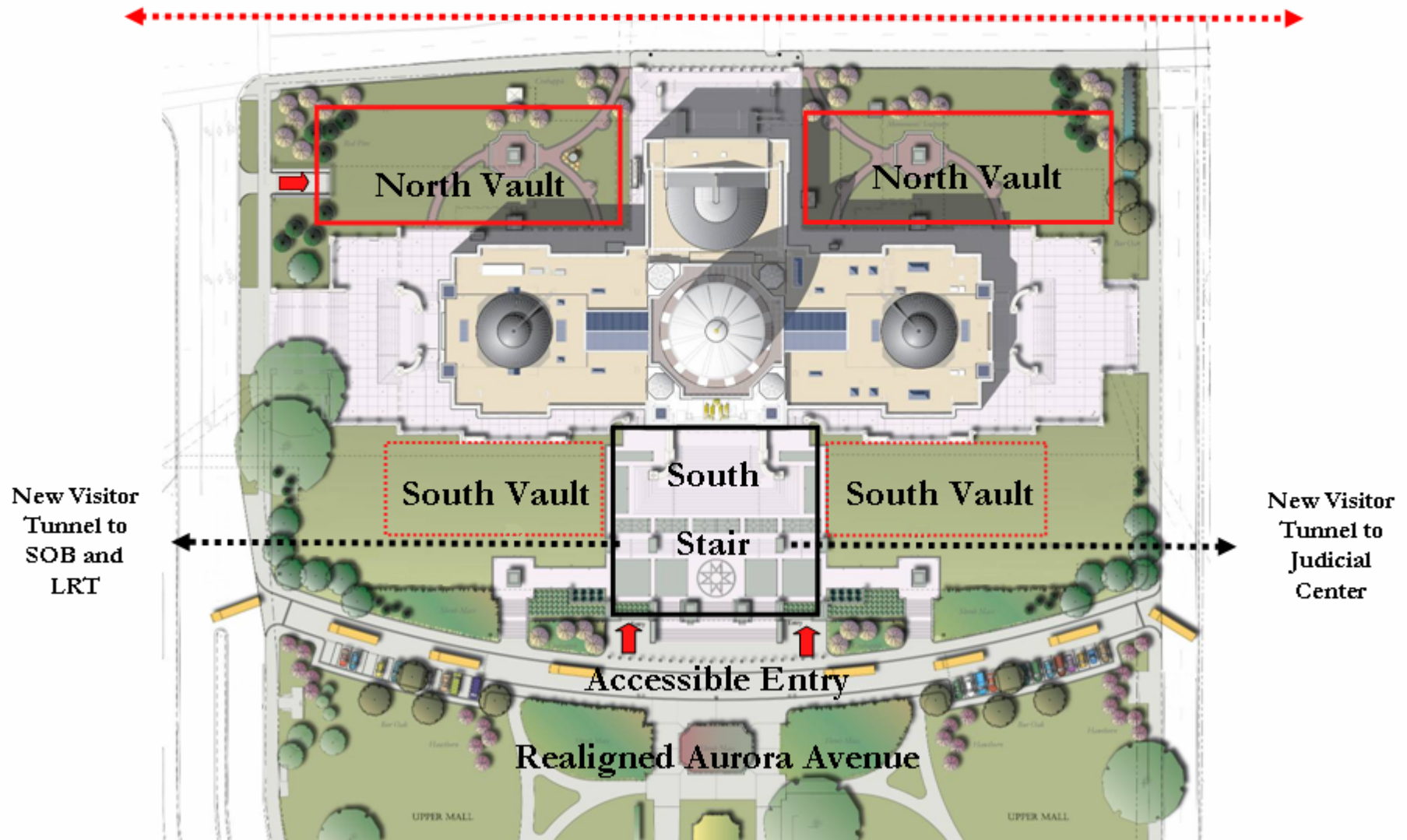
\$63.9 million



# PHASE I

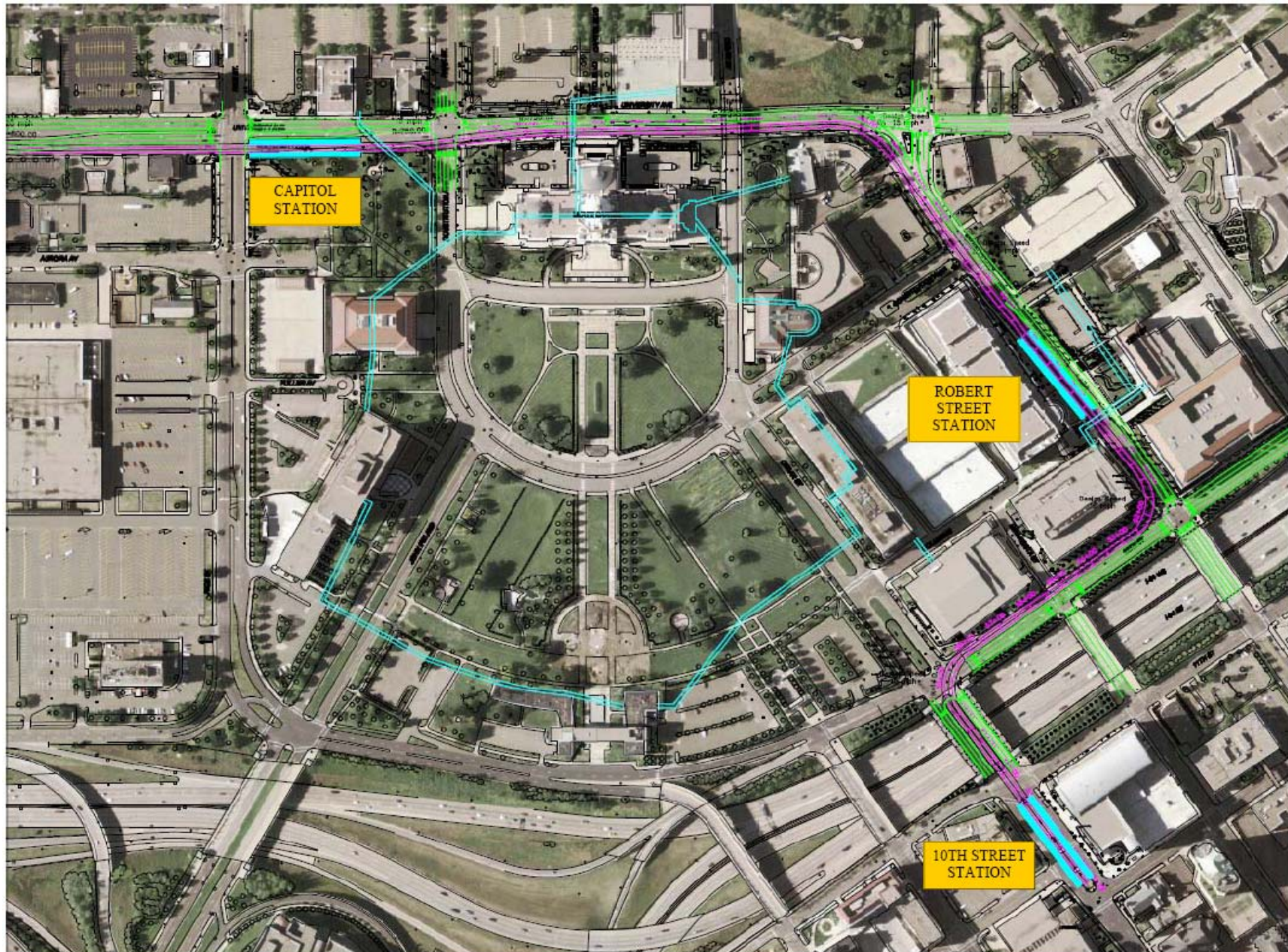
## North Vaults and South Stairs

*PROPOSED LRT ROUTE*





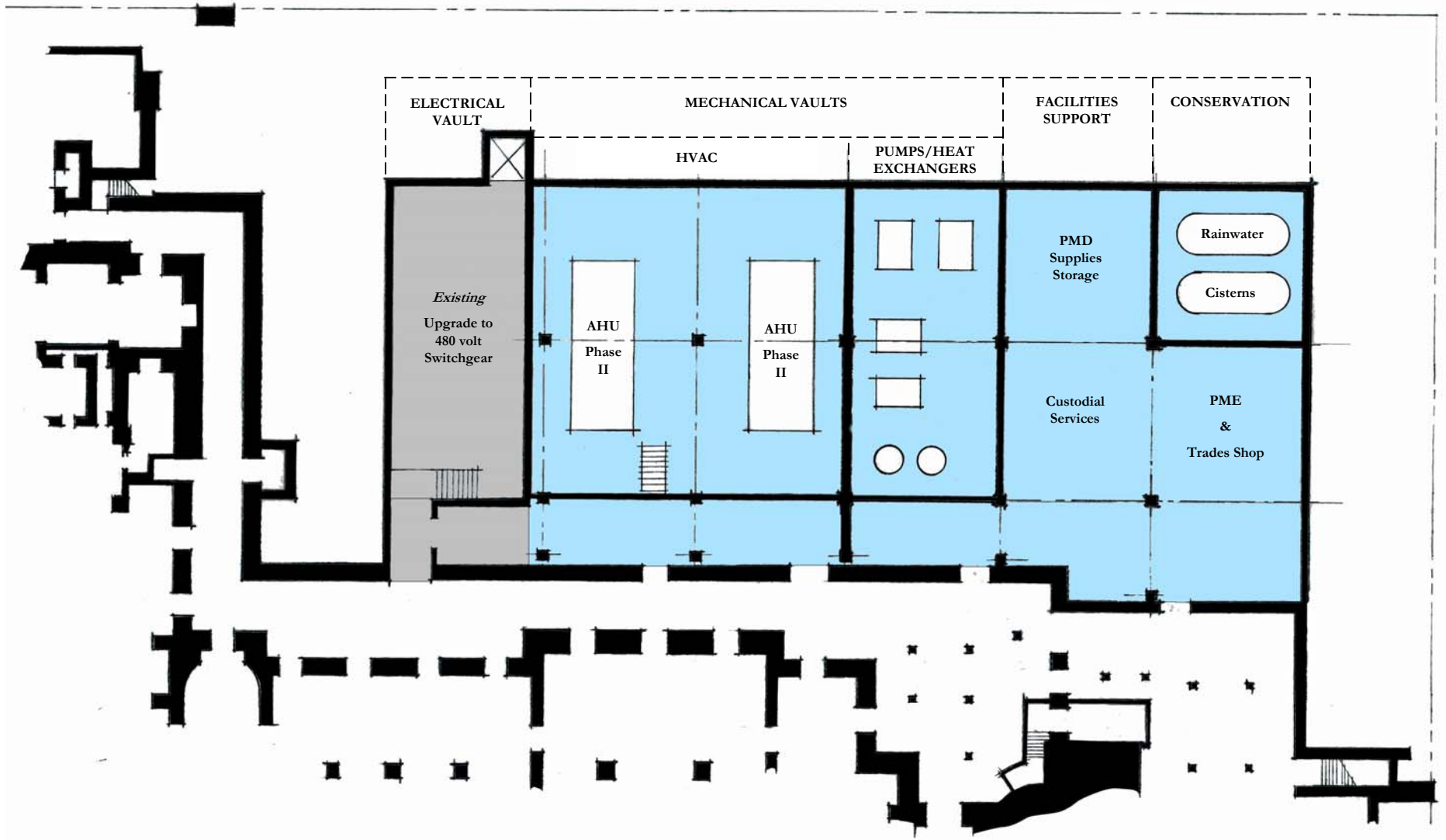
# CENTRAL COORIDOR - LRT - CAPITOL STATION PLAN





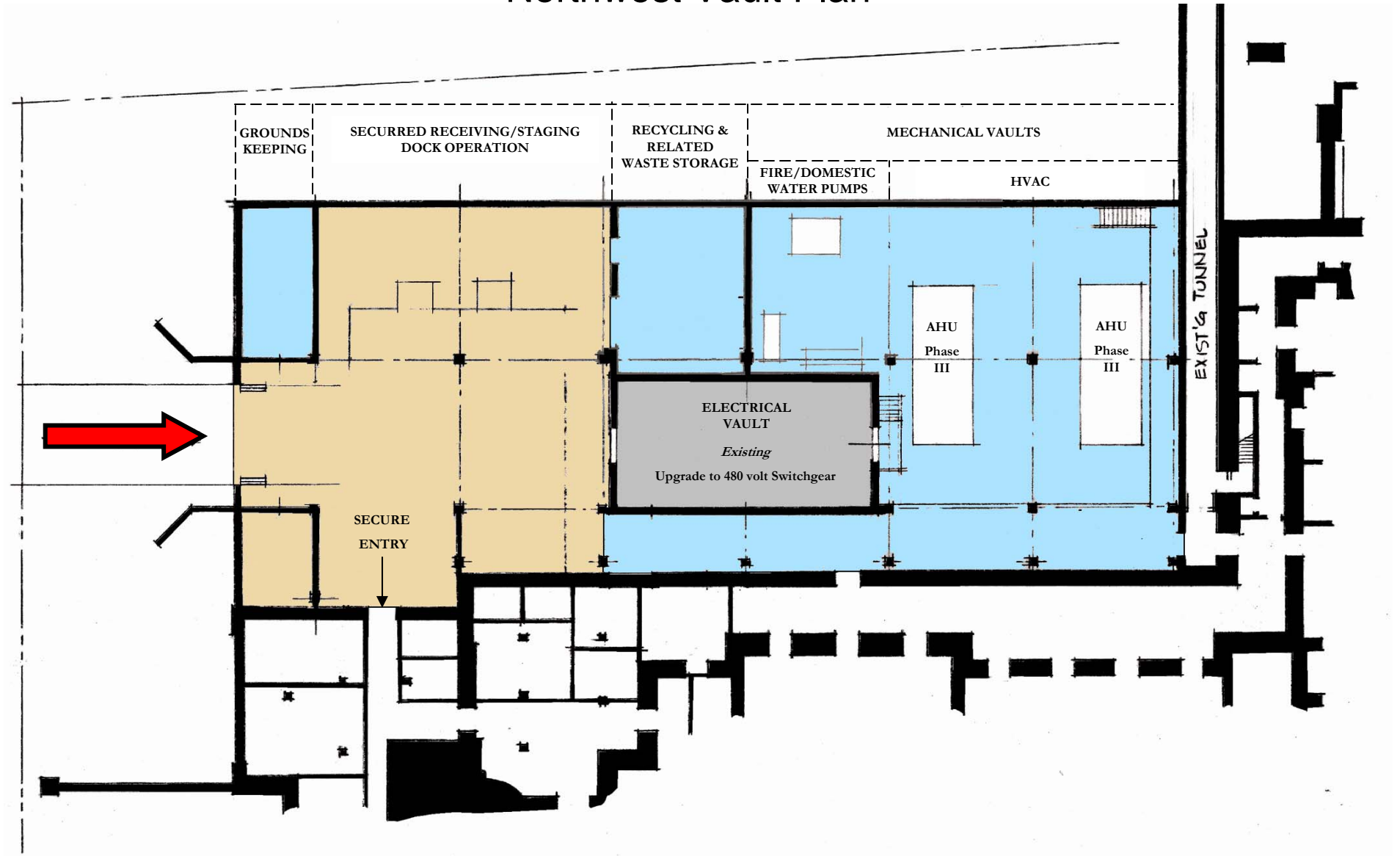
# PHASE I

## Northeast Vault Plan



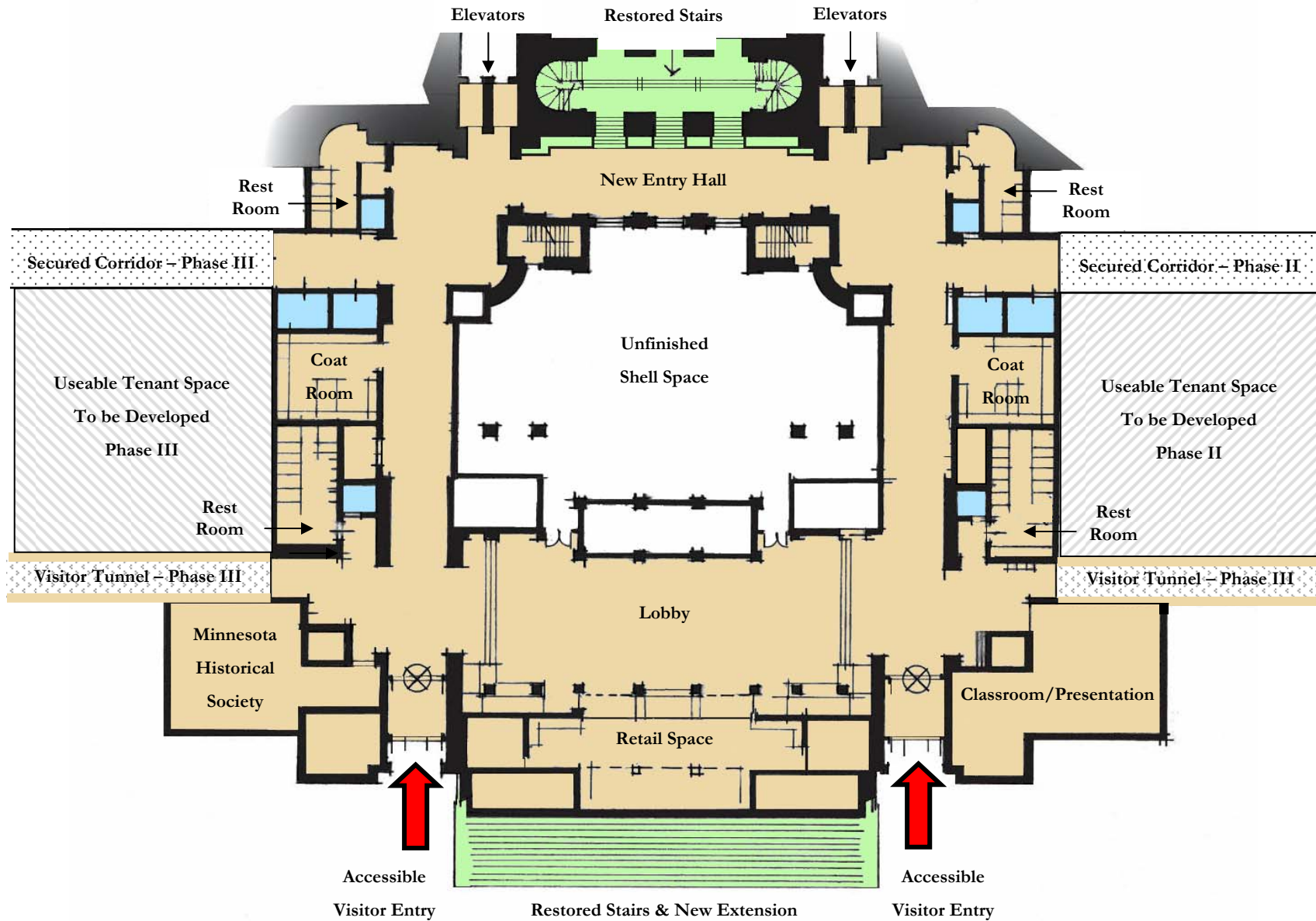
# PHASE I

## Northwest Vault Plan



# PHASE I

## South Stairs Plan



## ACCESS, SECURITY & LIFE SAFETY

### CODE & ADA COMPLIANCE

- Accessible Supreme Court
- Accessible Hearing Rooms
- Accessible Tunnel to Judicial Building
- New Fire Alarm System
- Enclosed Fire Stairs
- New Standpipes

## BUILDING SYSTEMS

### UPGRADE SYSTEMS & SERVICES

- Southeast Mechanical Vault
- New Secure Fresh Air Shafts (partial)
- New East Wing Building Systems
- Updated Sprinkler System
- New Underground Utilities

## CONSERVATION

### RESTORE

- East Wing Restoration
- East Wing Stone Restoration
- East Wing Window Replacement
- Southeast Site/Landscape Restoration

## PHASE II East Wing and Southeast Vault



## CONSTRUCTION TIMETABLE

2011 – 2013

## PRELIMINARY ESTIMATED COST

\$89.8 million



## ACCESS, SECURITY & LIFE SAFETY

### CODE & ADA COMPLIANCE

- Accessible Senate Chamber
- Accessible Hearing Rooms
- Accessible Tunnel to State Office Building
- New Fire Alarm System
- Enclosed Fire Stairs
- New Standpipes

## BUILDING SYSTEMS

### UPGRADE SYSTEMS & SERVICES

- Southwest Mechanical Vault
- New Secure Fresh Air Shafts (partial)
- New West Wing Building Systems
- Updated Sprinkler System

## CONSERVATION

### RESTORE

- West Wing Restoration
- Senate Offices and Chamber
- West Wing Window Replacement
- Exterior Stone Restoration
- Southwest Site/Landscape Restoration

## PHASE III West Wing and Southwest Vault



## CONSTRUCTION TIMETABLE

2013 – 2015

## PRELIMINARY ESTIMATED COST

\$86.2 million



## ACCESS, SECURITY & LIFE SAFETY

### CODE & ADA COMPLIANCE

- Accessible House Chamber
- Accessible Hearing Rooms
- Accessible Restrooms
- Visitor Center
- Secure Tunnel Configuration (Complete)
- New Fire Alarm System
- Enclosed Fire Stair

## BUILDING SYSTEMS

### UPGRADE SYSTEMS & SERVICES

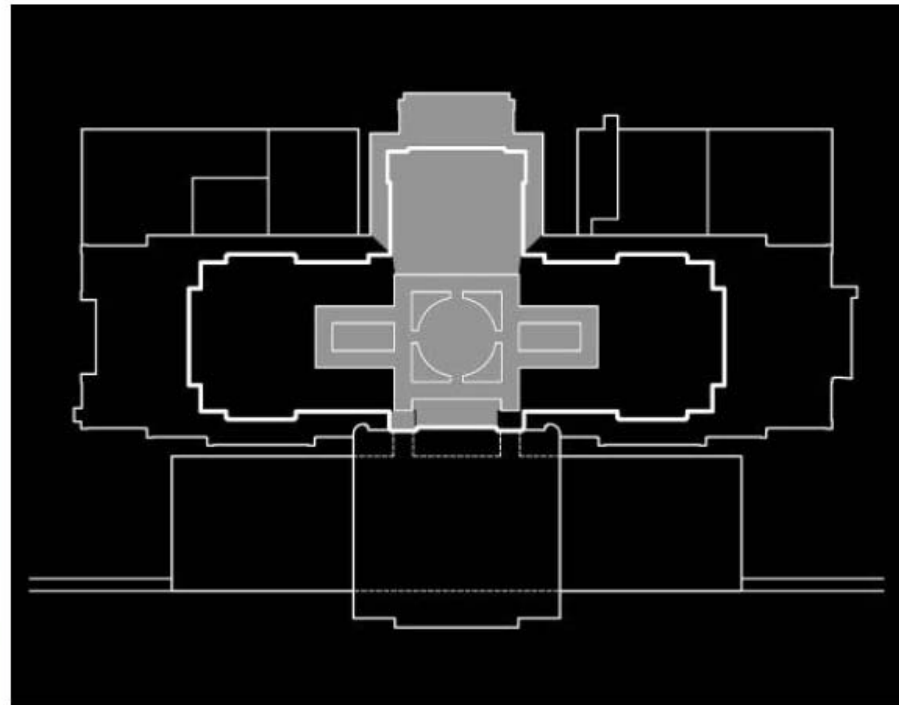
- New North Wing Building Systems
- New Secure Fresh Air Shafts (final)
- Updated Sprinkler System

## CONSERVATION

### RESTORE

- West Wing Restoration
- Rotunda Restoration
- Exterior Stone Restoration
- North Wing Window Replacement
- Renovate House Offices
- Final Site/Landscape Restoration

## PHASE IV North Wing and Rotunda



## CONSTRUCTION TIMETABLE

2015 – 2017

PRELIMINARY ESTIMATED COST

\$68.0 million

# CONSTRUCTION SCHEDULE

## 2008 - 2017

