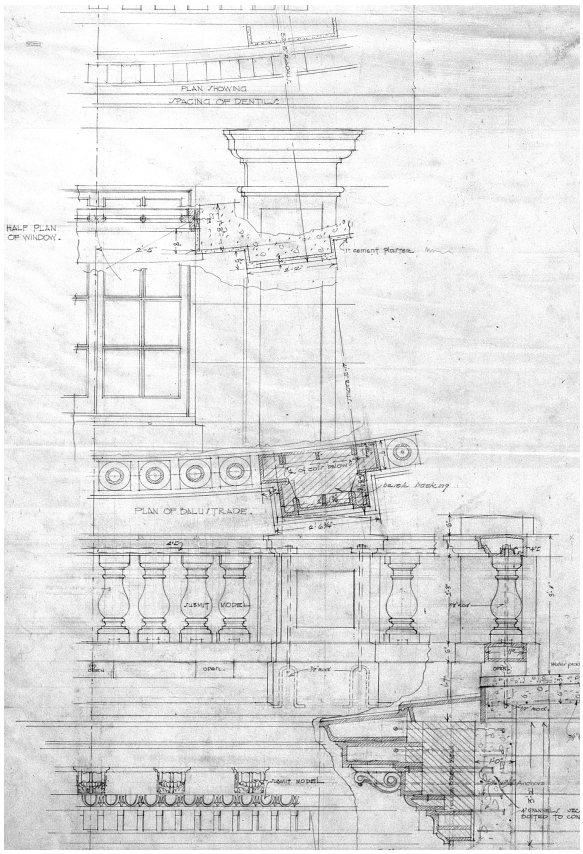
Each of the following categorical summaries includes a brief narrative introduction followed by a list of major recommendations. At the end of each summary is an Evaluation Matrix providing brief information organized under the following titles:

* Number
* Element
* Location
* Alternatives
* Justification Criteria:
* Enhanced Safety
* Enhanced Function
* Enhanced Preservation
* (Whether) Recommended

The purpose of the matrices is to identify each need with the one or more reasons the need is justified. Position papers explaining the importance of each of the three areas of justification-- enhanced safety, function and preservation, are contained in section I.B.2. Issue Statements, together with a General Project Summary.



In the following volumes of this report are contained the expanded categorical descriptions of the several scopes of work, including detailed discussion of the individual work items listed in the matrices. Please read first the summaries and then refer to these detailed treatments.

The "Interim Briefing" contained in this report presents a summary of the initial findings of space and staff requirements for the State Capitol. It also summarizes functional/locational criteria and a series of alternative space allocation strategies for provision of required future spaces. This information is the beginning of an in-process evaluation that will continue through additional study.

To determine current and projected staffing needs, department heads were interviewed in person. Other data was collected through written questionnaires. A major conclusion of the staffing projection study is that the staffing needs will likely expand from the present size of 560 persons to 610 in the year 2010, and to 655 by 2020, for an overall 20-year increase of 17%. It is assummed that the department heads have a reasonable feel for future needs.

There already exists a shortfall of space in the Capitol. Presently 162,465 s.f. of usable space is occupied, but 208,040 s.f. are needed, for a year 2000 shortfall of 45,575 s.f. The shortfall will expand to 73,750 s.f. by 2020. The implication is that, since the Capitol itself can not be expanded from within, either a new building must be erected or functions now in the Capitol must be relocated elsewhere, to accommodate the expanding space needs for key functions of state government, or a combination of both.

This study distinguishes between three types of locational criteria: First Priority space "reflective of either symbolic significance or essential functional relationships; Second Priority space for groups with "a significant need for location with the Capitol subject to space availability, or within a contiguous building," and "third Priority space for groups with "a need for location on Capitol Hill proximate to but not necessarily within the State Capitol Building or a contiguous building addition."

Upon analyzing which governmental units were in which type of Priority space, two principal strategies with four variations were described, together with charts showing the projected space utilizations for each option. These options are:

Strategy 1-A: Capitol without Expansion and Contemporary planning Concepts

Strategy 1-B: Capitol without Expansion and Restoration to Historical Circulation Configurations

Strategy 2-A: Capitol with Expansion and Contemporary Planning Concepts

Strategy 2-B/2-C: Capitol with Expansion and Restoration to Historical Circulation Configurations

Strategy 3-A: Capitol without Expansion and Restoration of Historical Circulation and Office Suite Configurations

Strategy 3-B/3-C: Capitol with Expansion and Restoration of Historical Circulation of Office Suite Configurations

Recommendations

Additional research is recommended to explore these strategies in greater depth and determine which, if any, will best satisfy the space expansion needs of future state government. Although not stated in the "Interim Briefing," the present recommendation implied throughout the other sections of this report is that the State's interests will be best met by pursuing Strategies 2-B/2-C, or possibly 3-B/3-C. These options call for restoration of the Capitol Building plus construction of an Annex Building to accommodate present shortfalls plus anticipated expansion needs.

SPACE ALLOCATION - PROGRAMMING

No.	Elements	Location	Alternatives	Criteria: Safety	Criteria: Function	Criteria: Preservation	RECOMMENDED
1	Space Utilization Strategies 2-b/2-c or 3-b/3-c	Throughout Building	Capitol with expansion and restoration to historical use configuration				
2	Space Utilization Strategies 1- A	Throughout Building	No expansion: Re-plan use of existing space				
3	Space Utilization Strategies 1- B	Throughout Building	No expansion: Restore historic circulation; re-plan existing space				
4	Space Utilization Strategies 2- A	Throughout Building	Expansion, re-plan use of existing space				
5	Space Utilization Strategies 3- A	Throughout Building	No expansion, restore historic plan and circulation				

Many of the existing site features and utilities servicing the State Capitol grounds were installed during, or near, the time of original construction. Since the Capitol building is nearly eighty-five years old, it is expected that some of these facilities have reached the end of their useful life expectancy and should be replaced. An Exterior Survey Report has been prepared on the Capitol site and is included in the report appendices. This report along with the research and analysis of the existing utility systems, form the basis for the recommendations provided below.

1. Full replacement of the existing water system.
2. Full replacement of the existing sanitary sewer system.
3. Installation of new storm water detention ponds, water quality facilities, and new storm drain collection/ conveyance lines.
4. Upgrades to existing sidewalks, stairways and stairway elements or replacement with new facilities if dictated by final site master plan.

The above improvements will help improve the function and safety of the Capitol site as well as provide for historic preservation of site features where appropriate. These improvements should help the Capitol site continue to meet its functional needs for the foreseeable future.

BUILT SITE FEATURES

	No.	Elements	Location: Perim. Streets	South	Southwest	Southeast	Northwest	Northeast	Central	Council Hall	D.U.P.	West Triangles	Alternatives	Criteria: Safety	Function	Preservation	RECOMMENDED
A. WATER	1	Water System - Limited Upgrade	■	■	■	■	■	■	■	■	■	■	Limited upgrade to repair problems as they occur. Quantity of broken lines expected to increase as system ages. Limited fire flow capacity.	■	■	■	■
	2	Water System - Full Upgrade	■	■	■	■	■	■	■	■	■	■	Full upgrade to replace existing pipe with new DIP pipe. Addition of 12-inch line along 500 North to increase flow to the area. Increases fire flow capacity and separates culinary supply from fire supply.	■	■	■	■
B. SEWER	1	Sewer System - Limited Upgrade	■	■	■	■	■	■	■	■	■	■	Limited upgrade to repair problems as they occur. Lack of flow monitoring causes concern over current system condition, possibility of contamination of subsurface areas due to deteriorated pipes.	■	■	■	■
	2	Sewer System - Full Upgrade	■	■	■	■	■	■	■	■	■	■	Full upgrade to replace old pipe with new PVC pipe up to the connections to the buildings. Removes threat of potential subsurface contamination to surrounding areas.	■	■	■	■
C. STORM DRAIN	1	Storm Drain System - Limited Upgrade	■	■	■	■	■	■	■	■	■	■	Limited upgrade to repair problems as they occur within piping system. No provisions for addition of detention facilities.	■	■	■	■
	2	Storm Drain System - Full Upgrade	■	■	■	■	■	■	■	■	■	■	Full upgrade to replace old pipe with new pipe and locate additional storm drain lines below ground. Reduces damage to pavement caused by overland flow scour.	■	■	■	■
	3	Detention Facilites	■	■	■	■	■	■	■	■	■	■	Addition of 4 small detention ponds (1 to each drainage area) and connection pipe to discharge flow at 0.2 cfs/acre. Compliance with City standards. As a "good-neighbor" measure. Reduces sediment load. Some grease/oil removal options available.	■	■	■	■
	4	Curb and Gutter	■	■	■	■	■	■	■	■	■	■	Repair curb and gutter and deteriorated asphalt to reduce erosion and eliminate ponding safety hazard. Install bicycle safe grates.	■	■	■	■
	5	Reroute Discharge away from City Creek	■	■	■	■	■	■	■	■	■	■	Compliance with City and State water quality standards.	■	■	■	■
D. SITE	1	Sidewalks & Staircases - Limited Upgrade	■	■	■	■	■	■	■	■	■	■	Repair sidewalks in poor condition due to settling. Add handicapped ramps to increase access. Repair stairways and associated elements to restore integrity and improve safety.	■	■	■	■
	2	Sidewalks & Staircases - Full Upgrade	■	■	■	■	■	■	■	■	■	■	Implementation of Alternative 1 plus removal, relocation or replacement of items impacted by adoption of new site master plan. Reconfigure site access with new sidewalks, stairways, and stairway elements to improve safety and efficiency for pedestrians.	■	■	■	■

The study of the landscape elements ties to and complements the traffic study, Section VII. of this report. Individual study elements of this landscape section include history, vegetation, slopes, views and irrigation.The analysis used the following seven overall standards to judge the site:

Reduce pedestrian/automobile interface conflicts
Provide a safe site environment
Provide a variety of uses for on-site users and visitors throughout the site
Develop efficient site usage for pedestrians
Develop efficient vehicle parking and circulation
Reflect the style of architecture and history of the Capitol building in the development of grounds
Retain a strong visual presence of the Capitol building on and off-site

From the analysis five general improvement alternatives for the Capitol grounds were developed:

1. Restructure perimeter streets, vehicle access, internal circulation, parking and building service areas. The vehicle circulation has effected and modified the Capitol grounds the greatest of any site element. Improving the access and use of the site by vehicles without loss of service requires a variety of site features to be modified in conjunction with each other to create the greatest positive effect. These recommendations include:
    * Expand parking structure capacity
    * Reduce surface parking
    * Consolidate vehicle entrances into the grounds
    * Develop a roundabout at State Street and 300 North
    * Eliminate the entry loop roads

2. Restructure pedestrian circulation to create new and safer walkway systems. Improve ADA circulation and increase pedestrian access off-site and throughout the Capitol grounds. Improving the safety for pedestrians and expanding the walkway system to adequately cover the grounds initiated the need for the following recommendations:
    * Develop walkways in the parking lots
    * Improve perimeter street crossings
    * Create interior and perimeter loop walkways
    * Develop additional secondary walkways
    * Develop an East Capitol promenade walkway

3. Develop pedestrian use areas by creating or redeveloping plazas lawn areas and recreational walkways with increased access to off-site and adjacent facilities. The Capitol grounds contain ornamental landscaping but little in terms of use areas for pedestrians. Developing such areas will facilitate higher use of the grounds as recommended below:
    * Create a pedestrian entry plaza
    * Redevelop the central garage plaza
    * Develop east and west Capitol axis plazas
    * Expand the southwest lawn area
    * Replant the southeast lawn area
    * Develop a northeast picnic area
    * Expand the Council Hall plaza
    * Develop site water features

4. Increase security on the Capitol Hill grounds. The vehicle access on-site is not current with today's need to provide secure government site facilities. Improvements to the grounds should include:
    * Develop landscape barriers
    * Reduce building service areas
    * Eliminate vehicle access adjacent to Capitol

5. Improve overall landscape development throughout the entire Capitol grounds and adjacent perimeter streets. The original master plans envisioned thematic site developments in harmony with the stature and classical nature of the proposed Capitol building. The pedestrian and vehicular improvements previously mentioned are envisioned to respect the original desires of the master plans. Continue and complete the landscape development already started by instituting the following improvements:
    * Complete the perimeter street tree plantings
    * Develop landscape medians within the wider perimeter streets
    * Develop a monumental front entry
    * Plant park trees in areas disturbed by the 1999 tornado, Council Hall and northern Capitol grounds.

These proposed recommendations provide the necessary improvements to reestablish the Capitol ground as one of preeminent landscape features in Utah, while developing a safe and secure facility for future generations to enjoy.

LANDSCAPE

No.	Goal	Location: Perimeter	South	Southwest	Southeast	Central	Northwest	Northeast	Council	Museum	West Triangle	Alternatives	Criteria: Safety	Function	Preservation	RECOMMENDED
1	Reduce pedestrian/automobile interface conflicts					■						Expand parking garage. Garage increases safety and reduces walking distances from automobiles.	■	■		■
2	Reduce pedestrian/automobile interface conflicts						■	■				Develop landscape/walkway medians in surface parking lots. Provides safety zones for pedestrians and snow loading area. Should not reduce site parking quantities.	■			■
3	Reduce pedestrian/automobile interface conflicts	■										Redevelop street corners. Will increase safety through better identification of pedestrian crossings.	■			■
4	Reduce pedestrian/automobile interface conflicts	■										Create mid-block crossing. Provides safer crossing of East Capitol Blvd. and better access to Memory Grove.	■	■		■
5	Reduce pedestrian/automobile interface conflicts	■										Develop landscape roundabout at the end of State Street. Increases traffic and pedestrian safety. Creates ceremonial entry to capitol. Do not impact historic entry stair.	■	■		■
6	Reduce pedestrian/automobile interface conflicts						■	■				Reduce building service areas. Reduces vehicle crossing of walkways.	■	■		■
7	Reduce pedestrian/automobile interface conflicts	■										Reduce vehicle entrances to three from eight. Reduces vehicle entrance confusion and pedestrian crossings and overall site security.	■			■
8	Reduce pedestrian/automobile interface conflicts		■									Eliminate front entry loop roads and parking lots. Creates safer, pedestrian-friendly front Capitol area heavily used by pedestrians..	■	■		■
9	Provide site safety and security		■	■	■							Develop site barriers in the form of walls and planting to reduce access to State Capitol	■			■
10	Provide site safety and		■	■	■	■	■	■				Eliminate all vehicle usage adjacent to State Capitol including service	■			■
11	Provide variety of site uses		■									Create entry plaza at the front of the State Capitol. Formalizes daily pedestrian use of area and creates major pedestrian plaza.	■	■		■
12	Provide variety of site uses					■						Redevelop existing plaza above parking garage to be multi-use and pedestrian friendly. Creates secondary area for pedestrian gatherings and enhances north State Capitol façade.		■		■
13	Provide variety of site uses				■							Develop East Capitol plaza. Plaza extends usage around Capitol and increases functionality of Capitol base.		■		■
14	Provide variety of site uses			■								Develop West Capitol plaza. Plaza extends usage around Capitol and increases functionality of Capitol base.		■		■
15	Provide variety of site uses			■								Redevelop southwest terrace into group gathering area. Area increases and extends functionality of Capitol site. Incorporate detention basin.		■		■
16	Provide variety of site uses				■							Redevelop southeast terrace as tree lawn terrace. Replanting of trees will replace existing lost trees and recreate landscape.		■		■
17	Provide variety of site uses							■				Develop picnic area in the northeast area to create "jumping off" area for City Creek Canyon. Area increases and extends functionality of Capitol site and provides view area of Salt Lake Valley.		■		■
18	Provide variety of site uses								■			Redevelop existing Council Hall plaza to create a visitor-friendly plaza. Area increases and extends functionality of Capitol site and provides specific visitor use area.		■		■
19	Provide efficient site usage	■	■	■	■	■	■	■	■	■		Develop sign program for entire Capitol site to direct and inform users of entire site opportunities. Increase usability of Capitol grounds and reduces confusion for visitors.	■	■		■
20	Provide efficient site usage			■								Create landscape promenade from east entry across East Capitol Boulevard to new overlook. Creates link to Memory Grove Park. Reflects unbuilt historic master plan.		■	■	■
21	Provide efficient site usage							■				Re-terrace northeast and east parking to reduce adjacent steep slopes. Increases usability of site and enhances pedestrian access to parking and northeast site and off-site.		■		■
22	Provide efficient site usage	■	■	■	■		■	■				Complete perimeter and interior sidewalk system to create perimeter loop walkway. Loop walkways increase safety and provide access and recreational function.	■	■		■
23	Provide efficient site usage		■	■	■	■	■	■	■	■		Provide additional site seating. Increases usability of site for all site		■		■
24A	Provide water feature					■						Create central fountain as part of new plaza. Develop as part of garage redevelopment. Creates central unifying element and extends usage around the Capitol.		■		■
24B	Provide water feature		■									Create entry fountain. Issues integrating into existing historic walkway		■		■
24C	Provide water feature				■							Reintroduce Mormon Battalion reflecting pool. Water feature would be a reintroduction of historic element. Issues with retrofitting new pump system.			■	■
24D	Provide water feature				■							Develop tiered fountain as part of proposed east plaza. Introduction of feature would be inexpensive water introduction and extend development features around the Capitol.		■		■
25	Develop cohesive site				■		■	■	■			Plant park trees as part of reconfiguring parking areas and unified Capitol grounds. Tree plantings unify Capitol grounds and extend park setting of front area to all of Capitol.		■		■
26	Develop cohesive site	■										Develop street tree plantings on 300 North, 500 North, and East Capitol Boulevard. Provides unified development to perimeter of Capitol. Reduces fire hazard along East Capitol Blvd.	■	■		■
27	Develop cohesive site	■										Develop landscape medians in perimeter streets. Provides safety zones for pedestrians. Unifies Capitol with surrounding neighborhoods and facilities.	■	■		■
28	Develop cohesive site	■										Develop identifiable entries to Capitol with East Capitol Blvd as main monumental entry. Provides better identification of proper entrances for visitors and recreates a main entry to Capitol.		■		■

To study the transportation needs of the Capitol campus, traffic data was collected on the streets surrounding the Capitol on February 28 and March 7, 2000. Information gathered included turning movement counts during the peak hours at 16 intersections and parking inventories of nine parking lots and 11 on-street locations. Physical conditions of the roadway network within the study area were also summarized. This data was used to evaluate the performance of the existing street network and to predict the performance of the street network for the horizon year 2020.

Future traffic volumes on State Street, Main Street/Columbus Street and 300 North were developed using Wasatch Front Region Council's regional travel demand forecasting computer model. Research compiled during the evaluation of the closure of Main Street between North Temple and South Temple was also used. An annualized growth rate was calculated from a comparison of the existing traffic volumes and the volumes predicted by the computer model.

Evaluating the performance of the existing street network indicates that there are improvements that must be implemented within the study area to provide acceptable traffic operations with or without proposed changes to the Capitol campus.

An accident analysis indicates that the accident rates are relatively low throughout the study area. However, the severity at the intersection of 300 North and Columbus is above average. This intersection has an accident severity rate that is slightly higher than the state expected rate for similar roads. This severity rate is anticipated to drop with scheduled UDOT improvements.

UDOT has evaluated improvements at the intersections of Columbus Drive with 300 North and 500 North and plans to install a traffic signal at 300 North.

In reviewing possible traffic and transportation alternatives for the State Capitol, the first alternative that was considered was the no-build alternative. In other words, leave the Capitol as it is currently in terms of population, parking layout, access and circulation. However, the long term implications of doing nothing points to a need for a better solution to managing and accommodating traffic while creating a safer, and more visitor-friendly Capitol campus.

Therefore, several solutions or alternatives were proposed in lieu of the no-build scenario. These alternative features would modify the existing transportation and parking system to increase safety and make the Capitol campus an enjoyable place to visit. Below is a list of transportation and parking related features that were considered:

* Eliminate some or all of the surface parking lots and replace them with additional underground parking
* Consolidate access points to the Capitol Campus
* Construct a roundabout at the intersection of State Street and 300 North
* Narrow East Capitol Boulevard
* Construct mid-block pedestrian crossings on East Capitol Blvd
* Narrow 500 North
* Construct a pedestrian underpass underneath Columbus
* Construct a mid-block pedestrian crossing on Columbus
* Reconfigure the Daughters of Utah Pioneers Museum parking lot
* Convert the existing loop road into a pedestrian access that will accommodate emergency vehicles, and special event VIP vehicle access
* Complete the exterior pedestrian walkway around the Capitol perimeter
* Provide a pedestrian connection to the west along the Capitol east/west axis.

The alternatives [See Alternatives 11,12, 13 in Section VII] were then analyzed based upon the following assumptions:

* 2020 traffic conditions
* Legislature in and out of session
* No change in the number of parking stalls on-site
* Background traffic growth of +1.64% per year

These assumptions provided a "worse case" scenario in terms of traffic conditions in which each alternative was analyzed. Based upon the detailed analysis, the following final set of alternatives were recommended:

· Eliminate some or all of the surface parking lots and replace them with additional underground parking;
· Consolidate access points to the Capitol Campus;
· Consider the installation of a roundabout at the intersection of State Street and 300 North;
· Narrow East Capitol Boulevard;
· Construct mid-block pedestrian crossings on East Capitol Boulevard;
· Narrow 500 North;
· Relocate the Daughters of Utah Pioneers Museum parking lot; and
· Convert the existing loop road into a pedestrian access that will accommodate emergency vehicles, and special event VIP vehicle access;
· Complete the exterior pedestrian walkway around the Capitol perimeter
· Provide a pedestrian connection to the west along the Capitol east/west axis.

These recommendations will enhance the Capitol campus by providing a campus that is more accessible to pedestrians and vehicles. Traffic circulation will improve, pedestrian access will improve, and most important, safety will improve.

TRAFFIC

No.	Elements	Location: Perim. Streets	South	Southwest	Southeast	Northwest	Northeast	Central	Council Hall	D.U.P.	West Triangles	Alternatives	Criteria: Safety	Function	Preservation	RECOMMENDED
1	Traffic Circulation	■		■		■	■	■				Consolidate access points to the Captiol campus	■	■		■
		■										Construct a roundabout at the intersection of State Street and 300 North	■	■		■
		■										Narrow East Capitol Boulevard	■	■		■
		■										Narrow 500 North	■	■		■
2	Parking		■	■	■		■	■		■		Eliminate approximately one-quarter of the surface parking lots and replace them with additional underground parking and interconnect east and west lots	■	■	■	
			■	■	■	■	■	■		■		Eliminate approximately one-half of the surface parking lots and replace them with additional underground parking	■	■	■	■
				■						■		Reconfigure the D.U.P. Museum parking lot	■	■		■
3	Pedestrian Circulation	■			■			■				Construct a mid-block pedestrian crossing on East Capitol Boulevard	■	■		■
		■		■								Construct a pedestrian underpass underneath Columbus Street	■	■		■
		■		■								Construct a mid-block pedestrian crossing on Columbus Street		■		
			■									Alternative 11	■	■	■	■
		■	■		■							Alternative 12	■	■		■
								■				Alternative 13	■	■		■

From its inception, the Utah State Capitol has been viewed by Utahns as a place for communicating, memorializing and celebrating the state — its people, its history, its accomplishments, its industry and economy, and its scenic beauty and other attractions. The original capitol architects provided wall niches and open spaces in the rotunda for statuary, and extensive wall areas in public areas that could be used to display artwork and commemorative plaques. When first completed, the public spaces of the first floor housed exhibits that were used to showcase Utah's history, products, industry, and visitor attractions. Similarly, much of the top floor was dedicated art gallery space.

Over the Capitol's nearly nine decades, this original intent has been carried out in a somewhat haphazard manner, as elements were added and subtracted piecemeal. The net result of more than 85 years of accumulation is the present eclectic mix of memorials, statuary, information plaques, exhibits and other interpretive/ communication elements. A wide variety in quality of visual appearance of materials and messages is evident.

In inventorying, evaluating, and rating existing monuments, exhibits and art at the Capitol complex, the planning team considered three important factors:

* The Capitol's interpretive/ communication functions, including commemorating and memorializing; promoting Utah; interpreting Utah; orienting visitors to the building and grounds; and displaying artwork.
* Audiences for interpretation and communication
* Appropriateness of communication/ interpretive components at the capitol

Nearly 100 different existing features have been identified and inventoried, not including dozens of individual pieces of art located in various governmental offices throughout the capitol building itself. In evaluating the merits of each existing communication component, 36 features scored high enough to be deemed "keepers;" 36 were judged to be marginally suitable for inclusion at the Capitol; while 25 appear to be better suited for removal and/or relocation elsewhere. The results do not reflect political considerations.

There appear to be two viable alternatives for developing an effective program to communicate with visitors to the Capitol building:

* Utilize the Capitol building and grounds only, accomplishing the functions of interpreting Utah's heritage solely within a renovated Capitol building itself and on the grounds. This option has the advantage of maintaining the concept developed by the Capitol's original planners and designers: keeping these functions solely in the building itself and on the grounds. In addition, this option would not require the expense of designing and constructing a new facility to accomplish these functions. Or,

* Utilize the Capitol building and grounds but also create a new, separate visitor center to house exhibits and other interpretive components. This alternative has the advantage of creating spaces specifically designed for the displays and other interpretive components, avoiding some of the problems inherent in the Capitol building itself. The primary disadvantages include the expense of developing a new facility, the possibly limited space available for such a structure, and the possibility that the new space would not be as visible or accessible as current spaces.

Recommendations

Despite the possible limitations involved in the second alternative, we recommend it as being the most beneficial overall in accomplishing the memorializing and communicating goals and opportunities of the state. Our other recommendations are found in the matrix below.

MONUMENTS & EXHIBITS

No.	Elements	Location: Capitol Interior	Location: Capitol Grounds	Location: Annex	Alternatives	Criteria: Safety	Criteria: Function	Criteria: Preservation	RECOMMENDED
1	Ground Floor	■	□	□	Expand exhibit area to original size; display Utah's history, attractions and industry, plus Utah "Hall of Fame"	□	■	■	■
2	Second, Third Floors	■	□	□	Exhibit statuary, memorial plaques and limited number of paintings	□	■	■	■
3	Fourth Floor	■	□	□	Expand exhibit area; display art pieces from State Art Collection	□	■	■	■
4	Capitol Grounds	□	■	□	Display memorial & statuary using selection criteria of Arts Commission	□	■	■	■
5	Visitor Center	■	□	■	As an option to or in addition to items 1-3 above, build new visitor center in the Annex Building or aon the Ground Floor of the Capitol	□	■	■	■

In order to determine the architectural renovation needs of the Capitol, detailed surveys of its rooms, exterior and architectural elements were prepared. Data recorded in the survey forms included existing conditions, architectural significance, functional ratings, preservation zones and photographs. Extensive architectural and historical research was conducted to determine the original design of the building. Architect Kletting's architectural plans and specifications were studied. The building's exterior elevations and interior spaces and rooms were measured and drawn to create an accurate set of "as-built" documents to analyze. Changes and alterations were recorded and the floor plans from 1916 and 2000 were compared. The rooms and spaces in the five levels of floor plans were ranked into "Preservation Zones" according to their historical significance, functional importance and architectural integrity.

In the analysis phase, the capitol's exterior and interior elements, and its floor plans (rooms and spaces) were evaluated and conservation, restoration or renovation recommendations were made. The recommendations are highlighted below. Also summarized below are related recommendations for systems-related architecture, materials salvage and reinstallation, the other buildings on Capitol Hill, and design guidelines and design review procedures. All of these topics, together with supportive survey findings, archival data and related pertinent information, is found in the main text and appendices of this report.

Architectural Exterior

Consistent with the State Capitol's architectural and historical significance, we recommend a conservation and restoration approach to improving the building's exterior. The guiding principal and goal should be to return the exterior to its original appearance, insofar as possible. Overall, the exterior is in good condition. In most instances, the materials are intact and free of significant deterioration, but need cleaning and minor repair. We recommend restoring damaged stone masonry and mortar with matching work, and chemically removing the soot and stains which currently mar the surface. We recommend replacing the newer windows with replicas of the original units. We encourage replacement of the unsightly "Senergy" finish on the two drum walls, window trim and columns with terra cotta matching the extant terra cotta in color and finish. We further recommend reconstructing the exterior skylight enclosure to meet seismic safety standards. Our other exterior recommendations are summarized below.

* Concrete: Repair and seal all exposed concrete and joints matching original detailing and finishes.
* Stone: Test, repair and clean the exterior stone; re-do patches with matching patching material; tuckpoint mortar joints, repair deficient structural connections;
* Terra Cotta: Test and inventory existing pieces; repair cracks and damaged pieces and mortar joints; repair structural and drainage deficiencies; clean terra cotta with gentlest means possible.
* Plaster: Remove "Synergy" from dome walls and columns; apply terra cotta with "imitation granite" finish to same areas; repair other exterior plaster surfaces with matching materials and finishes.
* Metals: Test, repair and refinish metal doors, hardware light fixtures, cupola and flashing and restore to good condition and original finishes.
* Wood: Repair and refinish wood window units (see below); add no new wood elements that were not part of the original "fire-proof" design.

* Skylights: Reconstruct the exterior skylights with a modern, structurally sufficient, architecturally compatible system and wired glass to match the original.
* Windows: Replace the existing metal windows with enameled metal, double-pane, thermal-break assemblies matching the original design; repair the wood-frame units in the dome with matching pieces and finishes.
* Doors and Hardware: Retain, repair and refinish the original exterior doors; replace non-original doors with units matching the originals; replace the north metal slab doors with paneled, metal units.
* Roofing: Regularly monitor and repair the recently installed roof; repair damage caused by installing parapet braces. If structurally upgrading the roof; re-roof with highest quality membrane system. Keep copper dome roof in good repair.
* Caulking: Remove non-original caulking from visible areas such as terra cotta and re-mortar with matching mortar; repair caulking where damaged in other locations.

ARCHITECTURAL ELEMENTS: EXTERIOR

		Location										Criteria			
No.	Elements	South Elevation	East Elevation	North Elevation	West Elevation	Roof	Drum Plinth	Drum Base	Drum Shaft	Rotunda Dome	Alternatives	Safety	Function	Preservation	RECOMMENDED
1	Concrete	■	■	■	■	□	□	□	□	□	Repair, seal and protect damaged and exposed concrete.	□	■	■	■
2	Stone	■	■	■	■	□	□	□	□	□	Clean, re-patch and repair damaged stone; repair damaged structural connectors.	■	■	■	■
3	Terra cotta	□	□	□	□	□	■	■	■	□	Repair broken pieces, remove caulking, repoint damaged joints; strengthen structural connectors.	■	■	■	■
4	Terra cotta	□	□	□	□	□	□	■	■	□	Face stuccoed portions of drum with terra cotta (imitating granite) similar to lower drum, as originally intended by Kletting	□	■	■	■
5	Plaster	□	□	□	□	■	■	■	■	□	Remove "Senergy" coating down to concrete; apply "imitation granite" plaster finish.	□	■	■	□
6	Metals	■	■	■	■	■	■	■	■	■	Repair and /or refinish damaged metals.	□	■	■	■
7	Wood	□	□	□	□	□	□	□	■	□	Repair and repaint damaged wood elements.	□	■	■	■
8	Windows	■	■	■	■	□	□	□	■	□	Repair and repaint deteriorating or damaged window assemblies.	□	■	■	■
9	Doors	■	■	■	■	□	□	□	■	□	Repair damaged doors and hardware; replace incompatible units with period doors.	□	■	■	■
10	Skylights	□	□	□	□	■	□	□	□	□	Reconstruct skylight structure and repair glass for seismic resistance.	■	■	■	■
11	Roofing	□	□	□	□	■	□	□	□	■	Monitor condition of new roofing; provide cyclical maintenance.	□	■	■	■
12	Caulking	■	■	■	■	□	■	■	■	■	Remove inappropriate caulking and re-mortar; replace damaged caulking.	□	■	■	■

Evaluation Criteria and Definitions for Exterior Elemen:
Safety: Work needed to enhance health and life safety of building occupants.
Function: Work needed to enhance function of this architectural element for its intended purpose as a necessary building component.
Preservation: Work needed to enhance historical, architectural or visual integrity, and character or quality.

Architectural Interior

Summarized below are our recommendations for improving the Capitol's interior architecture. The guiding principal is to exert the greatest restoration effort in the most architecturally and historically significant areas as defined by the Preservation Zones discussed herein. Therefore, in the major public and legislative areas such as the atrium and rotunda, Senate, House and Supreme Court Chambers, Gold Room, Governor's Board Room and Office, and other Preservation Zone I spaces, the goal shall be to return the architecture to its original appearance insofar as is practical. Preservation Zone II spaces, which include many of the perimeter meeting rooms and offices, are also of some architectural significance and should be sensitively renovated. Less important Rehabilitation spaces may utilize a less restoration-oriented approach. The specific categorical recommendations given below are explained in greater detail in the expanded architectural section of this report.

* Concrete: Repair and repaint exposed interior concrete; replace or repair "asbesticite" flooring with non-hazardous, light-weight concrete flooring.

* Stone: Salvage, store and reinstall stone removed during upgrading, matching the original appearance during restoration; repair damaged stone walls, wainscoting, stairs, balustrades, fireplaces, and trim with matching stone; clean any soiled interior stone.

* Tile: Clean tile; repair cracks in tile flooring with salvaged or matching tile. Where original tile is missing, install matching tile.

* Plaster: Repair and refinish damaged plaster walls, ceilings, cornices and trim. Where plaster elements are removed during renovation, install or replace them to match original appearance. Where lowered ceilings are removed, restore damaged original cornices. Where missing or new, match original plaster designs.

* Fabric: Have a conservator restore extant original fabric, especially in the Gold Room; protect wall murals during renovation. The original plain wall and ceiling fabric covering need not be restored.

* Metals: Repair, clean and re-use historic metal railings, stairs, grilles, doors and frames, light fixtures, signage, etc. in situ, refinishing damaged finishes to match originals. Replace newer, non-compatible metal elements with replica or period units.

* Glass: Restore original glass block in the rotunda (remove the terrazzo); preserve all Florentine glass in place; remove paint from painted glass; replace broken and new, non-compatible glass with historically appropriate glass. Restore the glass and frames in the atrium skylights.

* Wood: Protect and restore original hardwood flooring during renovation. They may need to be temporarily removed and reinstalled.

* Paint/Coatings: Using the original color scheme found in this report, restore interior surfaces to their original colors and finishes, including gold leaf and metallic paints. Where colors are not identified, do further paint testing, analysis and color matching.

* Furnishings: Inventory all original furniture pieces in or out of the Capitol; prepare a furnishings plan; restore extant original pieces and acquire new, matching replica pieces where missing; do same for cabinets, draperies, accessories and related furnishings.

ARCHITECTURAL ELEMENTS: INTERIOR

No.	Elements	Location: Basement	Ground Floor	Main (2nd) Floor	3rd Floor	4th Floor	Alternatives	Criteria: Safety	Function	Preservation	RECOMMENDED
1	Concrete						Repair, paint or seal all exposed concrete.				
2	Stone						Repair damaged stone in kind; refinish Sanpete Oolite; salvage and reinstall removed stone.				
3	Tile						Restore and replace in kind damaged and missing tile.				
4	Plaster						Restore damaged and missing ornamental, wall and ceiling plaster; new work to match historic.				
5	Fabric						Restore ornamental fabrics as in Gold Room; wall and ceiling "book cloth" less priority.				
6	Metal						Repair and restore or replace in kind damaged, altered or missing historic metals..				
7	Glass						Repair and restore or replace in kind damaged, altered or missing historic glass.				
8	Wood						Repair and restore or replace in kind damaged, altered or missing historic wood.				
9	Flooring						Restore significant flooring; recarpet or refloor less significant areas.				
10	Paint/Coatings						Repaint the interior, restoring its original colors and finishes.				
11	Furnishings						Retain all historic furnishings; create replica pieces when refurnishing key spaces.				

Evaluation Criteria and Definitions for Interior Elements
Safety: Work needed to enhance health and life safety of building occupants.
Function: Work needed to enhance function of this architectural element for its intended purpose as a necessary building component.
Preservation: Work needed to enhance historical architectural or visual integrity and character or quality.

Systems-Related Architecture

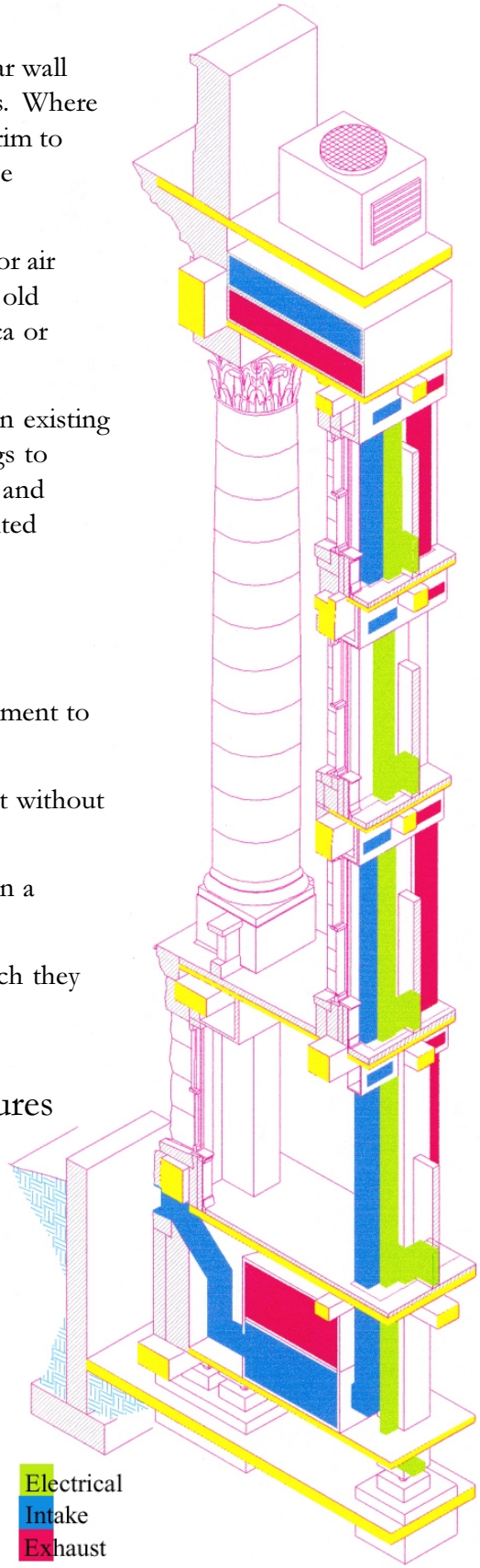
* Structural/Seismic: Install a combination base isolation/shear wall system that minimizes damage to original rooms and features. Where damage is unavoidable, restore the walls, ceilings, floor and trim to their historic appearance, especially in the Gold Room, House Chambers and Rotunda/Atrium areas.
* Mechanical: Use existing perimeter and interior wall chases for air movement to reduce need for new ducts and pipes; replace old plumbing with pipes in same concealed locations; use replica or period replacement grilles, fixtures, partitions, etc.
* Electrical: Run electrical conduit in new chases concealed in existing wall cavities. Channel floors and plastered walls and ceilings to conceal new wiring. Install period-sensitive lighting, plates and equipment where new work is needed. Avoid surface-mounted installations.

Materials Salvage and Reinstallation

* Inventory: Measure, photograph, number and code each element to be moved or altered.
* Salvage: Carefully remove, label, log and wrap each element without damaging the element.
* Storage: Store each element on numbered racks or shelves in a climate-controlled, protected area
* Reinstallation: Reinstall elements in the locations from which they were removed, matching the original joinery and finish.

Design Guidelines and Design Review Procedures

* Capitol Preservation Board: Empower the CPB to administrate and enforce design review policies, guidelines and programs
* Design Guidelines: Prepare design guidelines for the site, existing and new buildings.
* Design Review: Administrate the process by enforcing the design guidelines, reviewing applications and issuing certificates of appropriateness authorizing work.



Other Buildings on Capitol Hill

* Archives Building: Demolish the building and landscape the site; or, renovate and re-use for a non-archives state office facility.

* Boiler Plant: Demolish and replace with modern mechanical building and equipment.

* Greenhouse: Relocate operation off-site and demolish building; landscape the site and/or install a northern east-to-west access road.

* Data Processing Center: Retain and provide cyclical maintenance.

* State Office Building: Retain; complete remaining seismic upgrade; renovate interior to improve office layouts; re-face exterior facades or add a new structure to the front and sides.

* Roundhouse/Cafeteria: Demolish and repair the site; build a new Annex building(s) and Parking Garage in its place.

* Garage/Plaza: Demolish; build Annex and Parking Garage in its place.

* Gas Station: Finish demolition; repair damaged areas and site.

* D.U.P. Museum, Council Hall/Travel Council and White Memorial Chapel: Retain; provide cyclical maintenance, improve parking at D.U.P.

Recommendations

The disposition of the other buildings on Capitol Hill will depend on whether and how the Capitol is expanded by the construction of a new Annex or free-standing structures, and parking structure. The only location being considered for such an Annex is on the north side of the Capitol. Beyond, that, the size, shape, number of stories, number of buildings, and site orientation of the Annex are not presently known.

Any major new structures to the north, however, will result at a minimum in the demolition of the existing Parking Garage/Capitol Plaza structure as well as the Roundhouse/Cafeteria. Since these buildings are considered either in poor condition and/or not satisfactorily functional, or architecturally incompatible, we concur with the logic of removing these structures in favor of a more useful Annex building and parking structure.

Although not directly in the path of proposed new structures, we recommend demolition of the Archives Building, Boiler Plant and Greenhouse because of their inadequacies. The benefit of these demolitions will be to reduce the sprawling effect of the Capitol Campus, provide additional landscaped open space and possibly some related parking, and to allow for a road to connect the east side of the campus to the west side around the north side of the Data Processing Building. At present, cross-campus vehicular circulation is prevented due to the absence of such a road. The road would enhance security surveillance, fire fighting access, access to surface parking, and general traffic flow.

We recommend retaining the Data Processing Center and State Office Building because of their continued utility in serving essential functions of state government. We recommend upgrading the State Office Building to improve its interior office layouts, complete the balance of its seismic upgrading, and re-imaging the exterior to enhance its appearance and architectural compatibility with the Capitol and eventual Annex.

OTHER BUILDINGS ON CAPITOL HILL

No.	Location	Alternatives	Criteria: Safety	Criteria: Function	Criteria: Preservation	RECOMMENDED
1	Archives Building	Relocate archives; demolish building; landscape site, add road				
2	Boiler Plant	Demolish existing old plant and replace with new plant & equipment				
3	Greenhouse	Relocate function; demolish building; landscape site, add road				
4	Data Collection Center	Retain as-is; provide cyclical maintenance				
5	State Office Building	Remodel to obtain improved interior offices, complete seismic upgrade, re-face exterior				
6	Roundhouse/Cafeteria	Demolish (replace with Annex and parking structure)				
7	Garage/Plaza	Demolish (replace with Annex and parking structure)				
8	Gas Station	Demolish				
9	White Memorial Chapel	Retain as-is; provide cyclical maintenance				
10	Council Hall/Travel Council	Retain as-is; provide cyclical maintenance				
11	D.U.P. Museum Complex	Retain as-is; provide cyclical maintenance				

Evaluation Criteria and Definitions for Buildings on Capitol Hill
Safety: Work needed to enhance health and life safety of building occupants.
Function: Work needed to enhance function of this architectural element for its intended purpose as a necessary building component.
Preservation: Work needed to enhance historical architectural or visual integrity and character or quality.

In order to determine the original appearance of the interior of the Capitol, 125 samples of original paint, metal leafing and related finishes were harvested, tested and analyzed. The samples have been harvested from each of the building's five levels, with emphasis on the most architecturally significant spaces and details. However, it was also the intent to test enough samples from secondary (Preservation Zone II) spaces to also gain an understanding of the appearance of these areas.

The harvested samples were matched with Munsell color chips. "Paint Investigation" sheets were prepared containing two samples per sheet. Standardized information was provided for each sample including element code numbers, name of feature, element type, location, a Munsell chip to show the actual color, color notes, findings, test analysis, and a photo of the feature. These sheets are found in the Appendix of the main body of this report.

In addition, "Color Pallette" sheets were prepared to show entire groups of colors in certain rooms, by name, the First Floor Under Rotunda Corridor Area, Library, East Corridor, Main Entry, East Wing Offices, West Wing Office, Governor's Board Room, Governor's Formal Office, Gold Room, Corridors, Staircase, House of Representatives Chambers, Supreme Court Corridor, and Senate Chambers. Recommendations were provided for the restoration treatment of each of these areas.

The paint sampling and color matching determined that the Capitol interior was originally finished in a complex, multi-hued, somewhat earth-tone-based pallette typical of the 1914 "Golden Era" for American public buildings, during which the State Captiol was constructed. Among the findings were that in many key rooms, the original color scheme was more elaborate than it is now, and that the present colors are often not the same as the originals. It was also determined, especially after studying historic photos of the interior, that further color and finish testing will be needed to discover painted-over stenciling, gold leafing and other decorative features lost over time.

Among the key recommendations are the following:

* Conduct further testing to determine the nature of still-hidden features.
* Re-paint all painted surfaces in the Preservation Zone I rooms and spaces and any restored spaces in Preservation Zone II, returning to the original color schemes, including gold leaf finishes, where not extant.
* Employ the following prioritization for restoration of paint finishes: 1: House Chambers, 2: Governor's Board Room, 3: Rotunda, Atrium and related public spaces, 4: Senate Chambers, 5: Supreme Court Chambers, 6: Stairways; 7: Restored offices, meeting rooms and related spaces.
* Restore or recreate damaged or missing stenciling and other decorative motifs and finishes now hidden behind newer layers of paint, walls or ceilings.

No.	Alternatives	Safety	Function	Preservation	RECOMMENDED
1	Conduct further testing to determine the nature of still-hidden features. (Restoration Associates has submitted a proposal to do this additional work)				
2	Re-paint all painted surfaces in the Preservation Zone I rooms and spaces and any restored spaces in Preservation Zone II, returning to the original color schemes, including gold leaf finishes, where not not extant.				
3	Restore or recreate damaged or missing stenciling and other decorative motifs and finishes not hidden behind newer layers of paint, walls or ceilings.				
4	Follow the following prioritization for restoration of paint finishes: 1: House Chambers, 2: Governor's Board Room, 3: Rotunda, Atrium and related public spaces, 4: Senate Chambers, 5: Supreme Court Chambers, 6: Stairways; 7: Restored offices, meeting rooms and related spaces.				

The capitol building does not have the inherent strength to safely withstand the forces of a major, or even a moderate earthquake. Due to its seismic inadequacies, the lives of the building occupants would be in jeopardy in the event of a significant earthquake In addition, the historic fabric of this building makes it a truly unique structure, worthy of consideration for seismic upgrade not only to preserve life, but to preserve tangible history.

Recent discoveries have indicated that a significant earthquake occurs along the Wasatch Front about once every 350 years. Before the discovery of this seismic potential, earthquake resistant design and construction was virtually non-existent. Recent innovations in design and construction have made it possible to erect structures that can safely withstand the lateral accelerations of a major earthquake with minimal structural damage and injury to the occupants. Unfortunately, structures built prior to these modern innovations do not have the capacity or characteristics to perform well under seismic loading.

Past earthquakes and other learning experiences in conjunction with modern methods of structural analysis have shown that dome or towered structures with inadequate overall structural framework such as the Capitol building can be particularly vulnerable to damage in the event of seismic activity. The San Francisco City Hall, Santa Rosa City Hall, Stanford Library and the Golden Gate Park Pavilion are all structures similar in age and configuration to the Utah State Capitol that have been subject to considerable earthquakes. Each of these structures demonstrated characteristics of particular vulnerability because of their inadequate framework in conjunction with towers or domed components. Recognizing the vulnerability of structures such as these, officials have pursued the seismic retrofit of many such facilities including the San Francisco City Hall, Oakland City Hall, Pasadena City Hall and the Salt Lake City and County Building.

The Utah State Capitol ranks high both in overall importance of occupancy and in architectural appeal when compared to structures of similar age and nature. Under significant seismic loading it would pose a serious risk to life. In addition, loss of the historic fabric of this facility would be most unfortunate for all who have visited or will visit this building in the future. For both reasons, the seismic retrofit and upgrade of this building is a necessary pursuit.

Among the possible methods of upgrading this structure to bring it to an acceptable life safety level of performance, the most effective (as well as the most economical) appears to be a seismic base isolation system coupled with a minimum amount of additional structural shearwalls, in addition to bracing non-structural elements. A seismic base isolation system would protect the structure by limiting the amount of lateral acceleration and inter-story displacement that the structure experiences due to seismic activity, thus limiting the lateral forces, potential damage and threat to life. Due to the amplifications that could occur in the dome structure either with or without a base isolation system, interior shearwalls must be added to effectively tune the structure for optimal seismic performance. Since the lateral forces on the structure would be reduced by a base isolation system, the amount of required seismic shearwalls above the foundation becomes greatly reduced. As an added benefit, the base isolation system would require only limited intrusion into the historic fabric of the structure due to adding retrofit elements such as shearwalls. In this perspective, the base isolation system is not only the most cost effective method of achieving a life safety level of performance, it is the most amicable method of retrofit in consideration of the need to preserve the building's historic fabric.

For the current study of the Utah State Capitol Building, extensive three-dimensional computer modeling has been performed. As part of the study, the behavior of the existing building has been carefully examined, as well as the proposed retrofit and base isolation schemes herein outlined. Based on the results of the analysis, the base isolation system coupled with the minimal addition of new interior shearwalls appears to be the most effective option of meeting the recommended rehabilitation and performance objectives in terms of both cost and function.

SEISMIC ISSUES

	No.	Elements/Systems	Location: Structure	Interior	Exterior	North	South	East	West	Alternatives	Criteria: Safety	Function	Preservation	RECOMMENDED
A. STRUCTURAL	1	Lateral Force Resisting System								Add interior structural shearwalls to increase overall structural stiffness and limit structural damage and life safety hazards.				
	2	Lateral Force Resisting System								Add base isolation system to decrease overall lateral accelerations to limit structural damage and life safety				
	3	Lateral Force Resisting System								Add interior steel braced frames to increase overall structural stiffness and limit structural damage an limit life safety				
	4	Lateral Force Resisting System								Add passive dampening system to absorb seismic energy and limit structural damage and life safety hazards				
	5	Lateral Force Resisting System								Add reinforced concrete moment frame to interior of structure to improve overall ductility and reduce potential of structural collapse.				
	6	Lateral Support for Dome Structure								Add reinforced concrete ring to base of dome.				
		Lateral Support for Dome Structure								Add reinforcing concrete to upper and lower levels of windows to increase the lateral resistance at these levels.				
	7	Lateral Support for Dome Structure								Add and tune base isolation system to reduce amplification of seismic acceleration in dome structure.				
	8	Lateral Support for Dome Structure								Add interior structural shearwalls to work with base isolation system to reduce lateral accelerations of dome structure.				
B. NONSTRUCTURAL	1	Exterior Perimeter Walls and Cladding								Brace walls and cladding at window jams to prevent falling hazards.				
	2	Roof Parapets and Ballustrades								Brace parapets and ballustrades to prevent falling hazards.				
	3	Exterior Stonework and Ornamentation								Brace all exterior ornamentation to prevent falling hazards.				
	4	Exterior Stonework and Ornamentation								Base isolation system to reduce seismic acceleration on stonework to prevent falling hazards.				
	5	Stairs at Ends of Rotunda								Eliminate rigid attachment of stairs at lower level.				
	6	Skylights								Add translucent laminate to skylight system to prevent falling hazards.				
	7	Skylights								Replace skylights with seismically capable skylight system.				
	8	Skylights								Base isolation system to reduce damage and possible falling hazards from skylight system.				
	9	Exterior Stacked Granite Columns								Pin column segments together to improve lateral stability.				
	10	Exterior Stacked Granite Columns								Center core and reinforce column segments to improve lateral stability.				

Life safety is of primary concern in the restored Capitol facility. The mechanical system must complement the life safety features of the restored facility. Another essential design parameter is the historical nature of the Capitol. The mechanical system, including diffusers, grilles, radiation, fan coil units, cabinet heaters, plumbing fixtures and fire sprinkling system, must fit within the historical nature of the restored Capitol.

The existing HVAC and plumbing systems within the Capitol have exceeded their average useful life and need to be replaced.

Currently only the basement is fire sprinklered. The entire building needs to be provided with a fire sprinkling system to provide adequate life safety.

The current HVAC system in the perimeter rooms incorporates ceiling diffusers and ceiling supply air plenums. This necessitates dropped ceilings, which have seriously compromised the historical character of the rooms, concealing the original cornices, ceilings and related features. In general, dropped ceilings will not be acceptable in the restored facility.

Currently, the Rotunda is a return air plenum. Supply air is provided to the perimeter rooms. Return air from the perimeter rooms is transferred through wall grilles into the Rotunda area. The air then travels through the Rotunda into return air grilles located at the ceiling of the top floor. This compromises the safety of the Rotunda area, which is a means of egress. If there were a fire in a perimeter room and if the fire/smoke damper failed, smoke could travel into the Rotunda area and compromise safety in this egress area. The Rotunda return air plenum is a violation of the OSHA safety standards.

A smoke exhaust system needs to be provided in the Rotunda area. If a fire occurs within the Rotunda, the smoke exhaust system would keep the Rotunda clear of smoke, allowing people to exit the building.

The recommended HVAC system in the building is a combination of a central air-handling system and a four-pipe fan coil system. Central air handlers will serve the Rotunda area. These will provide heating, cooling, ventilation and make-up air for the smoke exhaust system. The perimeter rooms will be served by a fan coil system. The existing perimeter vertical shafts will be used for piping and moving outside air to the fan coil units.

The existing central heating plant was built in 1916. The boilers and associated equipment are 36 years old. The antiquated and energy-inefficient heating plant and equipment need to be replaced. The existing cooling equipment consists of two chillers in the State Office Building and one chiller in the Capitol. The chillers use R-11 refrigerant which is no longer being produced. A new central cooling plant should be provided in conjunction with the new central heating plant.

MECHANICAL SYSTEMS

	No.	Elements	Alternatives	Safety	Function	Preservation	Recommended
A. HVAC	1	Existing HVAC System	Replace entire system	■	■	■	■
	2	Supply Air to Rotunda	Provide supply air system	■	■	□	■
	3	New HVAC System	"All-Air" system	■	■	□	□
	4	New HVAC System	"All-Water" system	□	■	■	□
	5	New HVAC System	Combination of air and water systems. All-air system in Rotunda. All-water system in perimeter rooms.	■	■	■	■
	6	Location of Air Handlers and Make-Up Air Units	Basement	□	■	□	□
	7	Location of Air Handlers and Make-Up Air Units	Roof	□	■	□	□
	8	Location of Air Handlers and Make-Up Air Units	Basement and roof	□	■	□	■
	9	Atrium Smoke Exhaust System	Provide Atrium smoke exhaust system. Locate fans in Attic.	■	■	■	■
	10	Central Heat Plant	Provide new Central Heat Plant.	□	■	□	■
	11	Cooling Source	Relocate existing chillers and cooling towers to new Central Plant.	■	■	□	□
	12	Cooling Source	Provide new chillers and cooling towers in new Central Plant.	■	■	□	■
B. PLUMBING	1	Existing Plumbing System	Replace entire system.	■	■	□	■
	2	Roof Drainage System	Provide overflow roof drainage system.	■	■	□	■
	3	Fire Sprinkling System	Provide new fire sprinkling system in entire building.	■	■	□	■

Due to several factors including age, safety, disorganization, structural modifications, and lack of a standby power system, it is recommended that the existing electrical distribution system be replaced in its entirety. All existing wiring, including wiring that is original and wiring that has been added subsequent to the original construction, should be removed.

Installation of emergency and optional standby power systems is recommended so that the building can operate and be occupied during power disruptions. In addition, an Uninterruptible Power Supply with distribution throughout the building will provide uninterrupted and clean power for the computer environments. A lightning protection and grounding system is recommended to protect computerized systems as well as the structure.

An analysis of the branch circuit and feeder wiring concludes that horizontal wiring chases are required at several locations. Original ceiling heights will be reestablished. Consequently new conduits and lighting will need to be installed in the original ceilings. This will require the embedment of conduits within existing floor slabs, and in some instances existing conduits will be reused. Multiple electrical rooms located within the basement will aid in reducing the horizontal wiring requirements.

Existing light fixtures that are historically intact should be restored using energy efficient lamps where possible, or incandescent lamps. The building lighting levels should be higher than the original levels due to modern day expectations for the working environment. Sensitivity to the historic lighting fixtures is recommended in all areas including offices and presentation areas where the lighting needs conflict with historical lighting levels. Recommendations for exterior lighting include site and pathway lighting, parking area lighting, and replacement of the existing facade lighting.

ELECTRICAL SYSTEMS

	No.	Elements	Location: basement	attic	Rotunda	perimeter	other	Alternatives	Criteria: Safety	Function	Preservation	RECOMMENDED
ELECTRICAL	1	electrical distribution system	■	■	■	■	□	replace existing electrical distribution system	■	■	□	■
	2	electrical and mechanical systems	■	■	■	■	□	install emergency and optional standby power distribution system	■	■	□	■
	3	computer systems	□	□	□	■	□	install uniterruptible power supply (UPS), distribute throughout	□	■	□	■
	4	electrical service	■	■	□	■	□	replace existing transformer with new efficient models	□	■	□	□
	5	electrical service	■	■	■	■	□	replace existing transformers with a single transformer	■	■	□	□
	6	electrical service	■	■	■	■	□	provide two new transformers in a double ended configuration	■	■	□	■
	7	electrical service	■	□	□	□	□	remove medium voltage wiring from inside of building	■	□	□	■
	8	electrical feeder and branch circuits	■	■	■	■	□	replace all existing wiring	■	■	■	■
	9	electrical feeder and branch circuits	■	■	■	■	□	establish verically stacked electrical rooms	□	■	■	□
	10	electrical feeder and branch circuits	■	■	■	■	■	establish multiple electrical rooms in basement and attic	□	■	■	■
	11	electrical feeder and branch circuits	■	■	■	■	□	install electrical equipment only in electrical closets	■	■	■	■
	12	electrical feeder and branch circuits	■	■	■	■	□	conceal horizontal raceways within architectural finishes	□	□	■	■
	13	branch circuits and computer systems	□	□	□	□	■	install accessible flooring in Chambers and Offices	□	■	□	■
	14	electrical, computer systems, structure	■	■	■	■	□	install lightning protection and grounding system	■	■	□	■
LIGHTING	1	public area lighting	■	■	■	■	□	restore original lighting using energy efficient lamps	□	■	■	■
	2	House, Senate, Supreme Court lighting	□	□	□	□	■	restore original lighting, maintain existing incandescent lamp type	□	■	■	■
	3	chambers and public area lighting	□	□	■	□	■	install new energy efficient lighting above the skylights	□	■	□	■
	4	offices, conference rooms, etc	□	□	□	■	■	provide new lights, of traditional appearance, current technology	□	■	■	■
	5	corridors, stairs, etc.	■	■	■	■	□	add new lights to attain improved lighting levels, traditional appearance	■	■	■	■
	6	public area lighting	■	■	■	■	□	provide relay control system	□	■	□	■
	7	Senate, House, and Supreme Court	□	□	□	□	■	provide preset dimming system	□	■	□	■
	8	office, chamber, public lighting	□	□	□	■	■	repair incorrect renovations	□	■	■	■
	9	site lighting	□	□	□	□	■	install historic lighting around the site	■	■	■	■
	10	parking	□	□	□	□	■	illuminate parking areas to .5 fc	■	■	□	■
	11	exterior	□	□	□	□	■	replace façade lighting	□	■	■	■
	12	interior and exterior	□	□	□	□	■	separate lighting control for each lighting system	□	■	□	■

COMMUNICATION SYSTEMS

The existing communication systems include telephone and computer cabling, sound systems, and voting systems. Due to the obvious fact that these types of systems were unknown to the original architects and engineers, the capitol building was not designed to house these systems. As a result, these systems have been retrofitted into the capitol, usually at the expense of historical aesthetic value. For this reason, and others such as disorganization and obsolete technology, the existing communication systems should be replaced.

In addition to replacement of the above identified systems, other communication systems will need to be added to the capitol including audio and video production facilities, editing facilities, distribution facilities, and presentation facilities.

The existing structured cabling system is currently scattered sporadically throughout the building. During the renovation it is recommended that wiring closets be located in compliance with the standards predicated by industry governing bodies. It is further recommended that the system be installed with the highest rated cabling at the time of installation, providing the widest bandwidths and data speeds available for the future longevity of the system.

Current voting systems employ the use of mechanical switches for entering a vote, and display screens for vote annunciation and annunciation of voting results. It is recommended that the new voting system deploy the use of computers networked together and governed by a server. These computers will both accept votes and display results. Supplementary display screens will also be provided for visual annunciation of voting results.

Chamber and committee areas are currently equipped with public address systems. It is recommended that these systems be replaced and that new speakers systems, with less negative aesthetic impact and greater intelligibility, be installed. It is also recommended that the audio systems be connected to the building's A/V production facilities.

The building is not currently equipped with any video production systems. It is recommended that camera locations be provided in the chambers areas with ties to the video production system. The system will include routing, processing, editing, production, and distribution abilities. The system will also include a digital A/V production room, black box studio, facility wide A/V routing, and connections to authorized TV broadcasters. A connection to the Utah Educational Network is also recommended.

A TV distribution system is also recommended to provide local and cable channels to various locations within the Capital including: the Governor's offices, Attorney General's office, and other key officials' offices, as well as break rooms and other similar locations.

Audio and visual systems in key larger rooms are also recommended. These systems will include large screen video and computer projectors, VCRs and similar audio media sources, and an integrated control system for simple, user-friendly control of all room equipment. It is further recommended that the Governor's Board Room be equipped with video conferencing capability.

COMMUNICATIONS SYSTEMS

	No.	Elements	Location: basement	attic	Rotunda	perimeter	other	Alternatives	Criteria: Safety	Function	Preservation	RECOMMENDED
A. General	1	Audio Systems - Committee rooms						Provide sound reinforcement, recording, and teleconferencing abilities				
	2	TV Distribution System						Provide TV distribution system including local and cable channels				
B. Voice/Data Cabling	1	Vertical stacking of wiring closets						Stack wiring closets vertically in building				
	2	Multiple, horizontal wiring closets						Higher density of wiring closets located in basement and attice				
	3	Horizontal cable - Copper						Provide highest EIA/TIA rated cable for horizontal distribution				
	4	Horizontal cable - Fiber optic						Provide fiber optic cable for horizontal distribution.				
	5	Wireless networks						Use wireless networks for the distribution of computer and telephone signals				
	6	Backbone cabling - Copper						Use multi-pair copper cable for distribution of telephone signals				
	7	Backbone cabling - Fiber optic						Use fiber optic cable of distribution of computer signals				
	8	Standardization of termination						Use patch panel technology for termination of system cables				
C. Chamber Areas Voting Systems	1	P.C. Interface with server						Provide a computer interface for voting system with server for system management				
	2	Visual annunciation - Large screens						Deploy fewer, large screen displays				
	3	Visual annunciation - Small screens						Deploy larger quantities of small screen displays				
	4	Visual annunciation - Wireless screens						Deploy wirless video distribution to small, hand held screens				
	5	Visual annunciation - Wired distribution						Distribute voting results via internet, would require notebook computer for viewing				
D. Chambers Public Address	1	With consideration for teleconferencing						Provide sound system with echo cancellation for teleconferencing.				
	2	Without consideration for teleconferencing						Reduce cost by using mixers without echo cancellation abilities.				
	3	Tonal system for chamber area						Provide tonal system for annunciation of sessions and voting periods.				
	4	Professional audio feeds to A/V production system						Provide professional audio signal for production system.				
E.Chamb. Video	1	Production cameras						Locate broadcast cameras in chamber areas.				
	2	Production intercom system						Provide intercom system for production communications				
F. Production Studio	1	Digital, A/V production control room						A digital, A/V productions control room provided for central routing, monitoring, and control of building A/V systems.				
	2	Black box studio						Studio equipped with appropriate lighting, modular sets, chroma key technology, and A/V tie lines for production.				
	3	Facility wide audio / video routing						Large scale audio and video routers provided for signal distribution throughout the facility.				
	4	TV broadcaster connections						Provide broadcast connections to authorized				
G. Audio and Visual Systems	1	Large screen video/data projectors						Provide large screen video/data projectors and screens for display of video and computer images				
	2	Video conferencing						Provide video conferencing in select areas such as the Governor's board room				
	3	Audio and video equipment						Provide audio and video equipment for generating audio and video signals				
	4	Control systems						Provide PC based control systems with touch panels for human interface				

SECURITY SYSTEMS

In general, the Capital building security systems need to be improved to provide for more integrated monitoring and alarm annunciation. With current innovations in security technologies, the installation of video and detection devices can be successfully implemented with comparatively less impact on the overall historic restoration. Wireless technology and the advanced engineering of cabling issues can provide for a "hidden" system. There should be no need for exposed cabling in any location, with the possible exception of portable equipment like metal detectors or X-ray machines.

The core headend equipment should be replaced with a single platform concept where the facets of security are integrated. Video cameras, door switches, motion detectors, vehicle detectors, access control readers, and duress alarms can all be monitored on a single screen and controlled from a single terminal. Auto-

matic responses to alarms are "programmed" into the system allowing the officers to concentrate on events, rather than just watching camera screens.

All entrances should be monitored, with selected entries being access-controlled. This control system provides for identification and recording of when, where, and by whom these doors are used. This same system can be used for time tracking and employee presence. This access control should extend to all outside gate control and delivery locations. Progressing past a locked entry should never go unnoticed. In addition to the perimeter doors, motion detectors should monitor all interior spaces accessible from the ground or roof.

A wireless duress annunciation system needs to be provided. This will put duress switches anywhere they need to be. Emergency call station pedestals should also be placed in general locations in the parking and grounds areas for alarm calls and pedestrian safety. It is also recommended that infrastructure facilities (conduit and junction boxes) be wired for metal detectors and that X-ray machines be provided at all non-public, employee, and executive entry points.

SECURITY SYSTEMS

	No.	Elements	Location: basement	attic	Exterior	Rotunda	perimeter	other	Alternatives	Criteria: Safety	Function	Preservation	RECOMMENDED
A. General	1	Integrated security system						■	Incorporate all components of the security system onto a single CPU platform and monitored on a single terminal.		■		■
	2	Interior detection devices separately armed	■	■		■	■		Door Contact switches and motion detectors to be wired and programmed separately. Vacated areas can be armed while other areas still in use are disarmed.		■		■
	3	Metal Detectors & X Ray						■	These detection machines intended to be used at entrances to sensative areas. Not recommended in public areas.	■		■	■
	4	Physical barriers inside building				■	■		The use of a check station, such as 'Information Desks" can be a deterrent without being obnoxious. The use of glass and/or half walls in reception areas to impede direct access to inside office areas.	■	■	■	■
B. Video Surveillance	1	New video switching equipment						■	A new generation matrix type switcher with programming capabilities capabilities and modular expansion.		■		■
	2	Cameras linked with detection devices	■	■	■	■	■		All detection devices should integrate with video equipment to "call up" camera images at security alarm switch locations.		■		■
	3	Motion detection capability on cameras			■	■	■		All cameras can become motion detectors as well and give security officers a better view of events, not just screens.		■		■
	4	Combination of both fixed and controllable			■	■			Both fixed and controllable camera used to cover large public areas both inside and outside.		■		■
	5	All perimeter and publi areas with camera coverage			■	■			All public spaces should be seen by a camera, security officers can't watch everything all the time.	■			■
	6	Informative signs for camera surveillance				■			Informative signs can increase the effectiveness of discreet cameras in large public areas. Other cameras should be less noticed.	■		■	■
C. Access Control	1	Same Access control system for all locations	■	■	■	■	■		Have a single database and control system for all access control doors and gates. Do not mix and match systems.		■		■
	2	All entry devices are card readers	■	■	■	■	■		All entry devices should be the same type of card reader. Keypads and other type readers allow gaps in the control system.		■		■
	3	All exterior doors with door contact switches			■				All accessible doors from the outside should be monitored with switches. This includes electrical, mechanical and delivery doors.		■		■
	4	Motion detectors on ground floors				■	■		All spaces possibly accessible from the outside on ground and/or first floors or roof areas should be monitored with motion detectors.		■		■
	5	Vehicular detection and control						■	High load sensors at all vehicular entrances to the campus as well as vehicular detection loops at delivery ramps and decks. No large vehicular should ever be unnoticed.	■	■		■
D. Duress Annunciation	1	Wireless Duress System				■	■		Allows switches to be placed anywhere needed, even on the person.	■	■		■
	2	Fixed switch location				■	■		Fixed switch locations can still be used in reception, office, and chamber areas.	■	■		■
	3	Emergency call stations on outside grounds			■				Emergency call station pedestals in parking areas and grounds all manual emergency alarms to be annunciated in the security center.	■	■		■

It is recommended that the State provide a full, Uniform Building Code (UBC/ICBO)-complying life safety upgrade of the State Capitol Building to correct deficient conditions and enhance user safety. It is recommended that a performance-based design approach be employed, the standards and processes for which are detailed herein.

This report addresses key life safety issues with respect to requirements and needs. Among the issues discussed are construction type, occupancies, automatic sprinkler protection, fire alarm, floor separation, exiting, elevator lobbies, and emergency power. Specific remedial actions are recommended for each of these. For example, additional stairways are needed to satisfy egress requirements for a building of this type, size and occupancy. There is also the recognition that this is an historic building and that safety and functional needs must take preservation needs into account. However, it may not be practical or possible to provide full life safety compliance for the Capitol with current codes and maintain all of the important architectural features of the building although the achievement of both life safety and preservation goals should be given every effort.

An approach that clearly identifies reasonable life safety goals for the building design and provides an approach by which these goals can be met can provide a level of life safety that is equal to, if not greater than, what is intended by the code. The recommendations provided in this report are preliminary and are based on engineering judgment. They are subject to a well-defined analysis that includes establishing goals, which can only be determined following discussion and consensus by all the stakeholders, including the authority having jurisdiction. We believe that this is an interactive process that can lead to a significant improvement in the level of life safety for this important historic building and seat of government.

LIFE SAFETY

No.	Elements	Location	Alternatives	Criteria: Safety	Criteria: Function	Criteria: Preservation	RECOMMENDED
1	Stairways	Throughout building	Provide additional stairs to satisfy egress	■	□	□	■
2	Fire alarms	Throughout building	Provide code-complying fire alarm systems	■	□	□	■
3	Fire sprinklers	Throughout building	Provide fire suppression sprinklers systems	■	□	□	■
4	Floor Separation	Throughout building	Provide smoke dampers and partial separations	■	□	□	■
5	Elevator Lobbies	Throughout building	Provide complying rescue assistance areas	■	□	□	■
6	Emergency Power	Throughout building	Provide generator backup to key safety systems	■	□	□	■

The elevator equipment is in acceptable condition considering its age and the quality of maintenance being performed. A life span of 40 to 50 years is considered acceptable for this type of elevator but in our opinion, these elevators will only function properly for another 10 years. This is contingent upon whether the existing elevator maintenance contract is continued and improved to an appropriate level.

Our life cycle analysis of the existing apparatus found the present control system components have not exceeded their designed net useful life.

The elevators presently do not meet the latest codes in the three areas listed below. Although "grandfathered," these deficiencies should be corrected due to the associated safety liability issues.

* Firefighters' use
* Communications
* Emergency lighting in cars

The maintenance program now in effect provides adequate service. The number of deficiencies and call backs noted indicate the contractor is performing up to recommended standards. However, the maintainer of the equipment is not required to bring the system up to the standards established in this report due to the limitations of the maintenance contract in effect.

The existing equipment was upgraded about 1990 and should provide satisfactory service for the foreseeable future, providing the required preventive maintenance continues. Major upgrading of this system is not mandated or recommended at this time. However, long term planning requires some degree of modernization/ upgrading be formulated and implemented in the near future, to assure continued reliability and satisfactory performance. Major component replacements and/or systems upgradings are warranted in the following equipment areas:

* Elevator Cabs
* Elevator Landing Doors

To modernize the cabs and landing entrances, it will take an estimated 30 weeks to complete the project after award of the contract.

ELEVATORS

No.	Elements	Location: North Elevator	Location: South Elevator	Location: Annex	Alternatives	Criteria: Safety	Criteria: Function	Criteria: Preservation	RECOMMENDED
1	Elevator Cab	■	□	□	Replace Cab, North elevator	■	■	□	■
2	Landing Entrances	■	□	□	Provide vestibule Entrances at Floors 1-4	■	■	□	■
3	Elevator Cab	□	■	□	Replace Cab, South Elevator	■	■	□	■
4	Landing Entrances	□	■	□	Replace Entrances at Floors 1-4	■	■	□	■
5	Elevator Machine Room	■	■	□	Cyclically maintain machinery equipment	■	□	□	■
6	New Elevators	□	□	■	Install 3-car group if no link to elevators in Annex	■	□	□	■

The Americans with Disabilities Act (ADA) facility review of the State Capitol found many conditions not compliant with ADA Guidelines (ADAAG). It is understood that because the Capitol is a designated historic structure, full compliance may not be required under ADAAG Section 4.1.7. if full compliance would threaten or destroy character-defining features of the building. The twofold goal of a future renovation/restoration project, then, would be to achieve full compliance without diminishing the historical and architectural significance and character of the building and grounds.

The ADA facility review examined the parking lots, lawn areas, exterior monuments, restrooms, doors, water fountains, telephones, elevators, gift shop, display areas, basement, and gallery seating. The report provided seven recommendations which are briefly summarized here:

* Redesign the east entrance to become a fully compliant accessible entry.

* Make the front lawn accessible by adding curb ramps and meandering paths.

* Provide adequate access to the present gift shop, or any future gift shop.

* Lower the written portions of displays to be readable by those in wheelchairs.

* Make doors accessible with lever extensions of knobs, braille signs, and the required 12" and 18" door clearances, where possible.

* Provide direction signs for the nearest TTD (TDD) mounted at each phone bank and at accessible entries.

* In renovating, make the public restrooms ADA-accessible.

ACCESSIBILITY

		Location			Criteria			
No.	Elements	Exterior	Interior	Alternatives	Safety	Function	Preservation	RECOMMENDED
1	East entrance	■	□	Re-design to be compliant, accessible entry	■	□	□	■
2	Front Lawn	■	□	Make accessible by adding ramps, paths	■	□	□	■
3	Gift Shop	□	■	Provide access paths of compliant widths	■	□	□	■
4	Displays, Exhibits	□	■	Lower written potions to be wheelchair accessible	■	□	□	■
5	Direction Signs	□	■	Provide signs at phone banks and entries	■	□	□	■
6	Doors	□	■	Provide levers, braille signs, clearances	■	□	□	■
7	Restrooms	□	■	Make public restrooms fully accessible	■	□	□	■

The State of Utah contracted separately with IHI Environmental to examine the Capitol for environmentally hazardous materials and to make recommendations for the removal or mitigation of the dangers of the same. IHI prepared a 500-page report, a 28-page excerpted summary of which is included in the main body of this report. An even more abbreviated summary of key recommendations is provided below. Inasmuch as we are recommending the demolition of some of the buildings examined in the IHI report, and whereas the primary focus of our report is the Capitol building itself, we limit our summary to recommendations regarding the Capitol. Readers interested in greater detail for either the Capitol or the other buildings on the Capitol campus are referred to the expanded summary herein, or to the larger report in the possession of the state. It should also be noted that some of the remedial action recommended in the IHI report has been completed or may be ongoing. The preparers of this report have not been informed as to the extent of remediation or mitigation at the time of this writing. Our key recommendations include:

* Locate all asbestos in the building
* Where possible, manage asbestos in place without endangerment
* Remove/abate asbestos impacted by demolition or renovation
* Follow standard asbestos maintenance and removal practices and regulations
* Abate lead paint during any demolition or renovation which disturbs painted surfaces
* Follow standard lead paint maintenance and removal practices and regulations
* Designate clean hand washing, eating and change areas
* Do follow-up testing of lead content in the Capitol water
* Based on tests, replace any lead-contaminated drinking fountains and piping
* Remediate or abate any other conditions involving hazardous materials or waste

ENVIRONMENTAL REPORT

No.	Alternatives	Criteria: Safety	Criteria: Function	Criteria: Preservation	RECOMMENDED
1	Locate all asbestos in the building				
2	Where possible, manage asbestos in place without endangerment				
3	Remove/abate asbestos impacted by demolition or renovation				
4	Abate lead paint during demolition or renovation which disturbs painted surfaces				
5	Designate clean hand washing, eating and change areas				
6	Do follow-up testing of lead content in Capitol water				
7	Based on tests, replace any lead-contaminated drinking fountains and piping				
8	Remediate or abate any other conditions involving hazardous materials or waste				

The State Capitol building is the highest threat level facility on Capitol Hill. It ranks as a Level Four risk in the Federal Threat Assessment System. Among the recommendations made to improve security in and around the building are the following:

* Remove the entire gas station
* Monitor the building and grounds continuously by an "untasked" security officer
* Upgrade the monitors in the camera room; have two monitoring personnel
* Have deliveries made to a single, secured environment
* Install security card readers at all doors
* Secure all electrical equipment with alarms and locks
* Remove all hedges from around the building
* Place metal security grates and glass breakage sensors on all ground floor windows
* Remove pine trees from the grounds, or trim them clean up to 7' above grade

Although not considered a high security risk, the State Office Building is rated a Level Three building using the Federal Threat Assessment System. Recommended security remedies include:

* Add reception counters at the two public entries
* Have camera monitoring of lobbies on two main floors
* Install a security gate in the dock area
* Monitor all other doors with cameras and/or alarms
* Improve security doors at the state's emergency command center on the bottom floor
* Place the command center under CCTV surveillance
* Place cameras at key exterior areas around the building

The State Archives Building, if retained, would be considered a Level Two facility and should be monitored more regularly by the private guard service. The Grounds Maintenance Building, if retained, should have more secure doors and be kept locked when not in use. The adjacent pile of concrete should be removed. This area needs to be monitored with an operable camera.

PHYSICAL SECURITY REPORT

No.	Capitol	State Office Building	Alternatives	Criteria: Safety	Criteria: Function	Criteria: Preservation	RECOMMENDED
1	☐	■	Remove the entire gas station	■	☐	☐	■
2	☐	■	Upgrade the monitors in the camera room; have two monitoring personnel	■	☐	☐	■
3	☐	■	Install security card readers at all doors	■	☐	☐	■
4	☐	■	Secure all electrical equipment with alarms and locks	■	☐	☐	■
5	☐	■	Remove all hedges from around the building	■	☐	☐	■
6	☐	■	Place metal security grates and glass breakage sensors on all ground floor windows	■	☐	☐	■
7	☐	■	Remove pine trees from the grounds, or trim them clean up to 7' above grade	■	☐	☐	■
8	■	☐	Add reception counter at two public entries	■	☐	☐	■
9	■	☐	Have camera monitoring of lobbies on two main floors	■	☐	☐	■
10	■	☐	Install a security gate in the dock area	■	☐	☐	■
11	■	☐	Monitor all other doors with cameras and/or alarms	■	☐	☐	■
12	■	☐	Place the command center under CCTV surveillance	■	☐	☐	■
13	■	☐	Place cameras at key exterior areas around building	■	☐	☐	■