CALIFORNIA STATE CAPITOL
ANNEX PROJECT

PLANNING STUDY DECEMBER 2017

This report has been prepared by CSHQA, Inc. for the Joint Committee on Rules
to assist the legislature in accordance with SB 836 (Chapter 31) Statutes of 2016

California's new Capitol Annex should convey to visitors California's positive, hope-filled outlook, founded upon the deliberative Democracy which unfolds there, by welcoming all Californians, engaging all Californians, safeguarding the future of all Californians, and demonstrating healthful, accessible, and sustainable designs, while preserving the beauty and vistas of California's legacy Capitol Park and inviting all its guests to explore and take pride in one of the most energy-efficient capitol buildings in the nation.

—Assemblymember Ken Cooley, Chair, Joint Committee on Rules

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ACKNOWLEDGEMENTS

Special thanks to the following for their leadership and commitment to the State of California

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Lieutenant Governor **Gavin Newsom**

Assembly Speaker **Anthony Rendon**

Assembly Republican Leader **Brian Dahle**

Senate President pro Tempore **Kevin de León**

Senate Minority Floor Leader **Patricia C. Bates**

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A great building must begin with the immeasurable, must go through measurable means when it is being designed, and in the end must be unmeasured. —Louis I. Kahn

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PURPOSE OF THE STUDY

In 2016 the Legislature passed SB 836 which was signed into law. SB 836 provides funding to address deficiencies in the State Capitol Annex, which is home to both the Legislative Branch of the California Government and the Governor's and Lieutenant Governor's offices. This study ensued from the passing of SB 836 and is to serve as a reference to document the current deficiencies and the future design goals for the Capitol Annex. The project goal is to evaluate if the Capitol Annex can be appropriately modified to house the desired uses within the building, if it should be removed and replaced, or if it is possible to expand the existing footprint of the building. At its conclusion, the project will shape the future of the Legislative Branch for the next 50 to 100 years, provide the public with a safe, inviting building to participate in the governmental process, and provide the state with one of the most energy-efficient state capitol buildings in the United States.

Report Organization

THOSE INVOLVED – A listing of the various people who contributed to this planning study

PURPOSE OF THE STUDY – A short synopsis of the planning study process and findings

INFORMATION GATHERING AND BACKGROUND – A compilation of documents, drawings, history, and known information

DESIGN GOALS – An aspirational exercise on future design initiatives

PLANNING CONSIDERATIONS – Planning concepts and ideas that were evaluated as part of the planning study

TABULAR DOCUMENTS BASED ON EXISTING BUILDING FLOOR PLANS, SURVEYS, AND REPORTS – Detailed tabulations of anticipated and desired areas/space

CONCLUSIONS AND RECOMMENDATIONS – Final analysis comments

APPENDICES INDEX – Listing of the attached documents for reference use

About the Planning Team

CSHQA, Inc. is a full-service design firm specializing in architecture, interior design, landscape architecture, and electrical, mechanical, civil, and telecommunications engineering.

Our office is located at: 1450 Harbor Boulevard, Suite A, West Sacramento CA 95691.

Our experienced team of design professionals is dedicated to capitol buildings as a specific building type. This same team led the Idaho State Capitol Renovation, Expansion and Historic Restoration that spanned ten years, five legislatures, four governors and cost $120 million. The master planning process for the Idaho State Capitol was revisited several times as the project progressed and was agile enough to endure economic downturns and numerous changes within the owner leadership team. Our team is also working on the Wyoming State Capitol Renovation, Expansion and Historic Restoration, which at completion in 2019 will span five years and cost approximately $116 million (total project $200 million). In 2015, the project was having difficulties progressing, and CSHQA was engaged to assist in planning and execution of construction documents and to offer advice on the related office building. We have visited many State Capitols to research this unique building type, to learn from others who have been involved in Capitol Renovations, and to gain a deeper understanding of public engagement and legislative processes, as well as best practices.

We lived these projects and were fortunate to be instrumental in planning, programming, team building, design, documentation, material selection, and construction administration.

Our firm is our people. It's how we collaborate with each other and our clients. It's how we strive for excellence and respond to challenges. We are constantly looking for opportunities to create smarter, better performing environments that enhance the way people live, work and play, and how they feel in the spaces we create.

Summary of Study Effort

Our first step was to gather known information (documents and drawings) available within the State's files. Next, the design team and legislative facilities leaders walked through each room of the Capitol Annex to gain a sense of how the building is being used. We reviewed the current configuration and updated the composite building plan document to reflect significant as-found conditions in the field.

Following the plan evaluation and on-site walkthrough, we developed a spreadsheet of square footage areas to indicate the current uses within the Capitol Annex. This information was used to evaluate how Members of the Legislature and other users of the building including the Governor, Lieutenant Governor, Department of General Services (DGS), and all associated staff have expanded or contracted area needs in contrast to past report predictions. We identified 20+ years of trends for use in forecasting and estimating future areas and configurations that will be needed by the state governing processes.

Understanding those trends and current uses, we then developed design goals and planning considerations for future design. For this, we engaged Capitol government leaders and stakeholders in high-level goal setting work sessions. We reviewed and integrated previous building studies and reports related to the planning process. These studies were thoughtful, professionally done, and provided quality information on past planning processes; however, we observed that the occupancy forecasts were not accurate. This is not unusual since the number of occupants within a building is dependent on many future decisions and factors that impact occupant loads.

Based on our research, we generated a space programming document to illustrate future area needs. It includes a list of needed spaces and their desired adjacencies. Direct interviews were conducted with designated primary stakeholders of the Capitol Annex, less the Executive branch offices, which were conducted by DGS. The information gained through the high-level goal setting work sessions, the direct interviews with various users of the Capitol Annex, and standards for room sizes by position utilized by DGS were used to create this space programming document. We generated a *Building Use Evaluation Spreadsheet*, which can be compared to the *New Future Space Planning Analysis*. We also evaluated non-assigned spaces such as toilet facilities, corridors, building structure, mechanical/plumbing, electrical, and data communication spaces. The existing use program also includes spaces indirectly related to the function of the Capitol Annex such as the restaurant/café and the member's parking garage.

The space programming document indicates that an ideal Capitol Annex size is approximately 514,000 square feet. The existing Capitol Annex is around 325,000 gross square feet (not including the basement parking area or light wells). This suggests that the existing Capitol Annex is 189,000 square feet too small. To gain the needed area a new Capitol Annex could be constructed, or the existing building could be remodeled and an addition be provided. Following are some considerations regarding this choice:

The existing building has health, safety and welfare deficiencies including undersized stair and exit widths, inefficient and obsolescent HVAC (mechanical) and electrical/data systems, failing toilet and plumbing systems, and areas that are non-compliant with California's Title 24 accessibility standards. ("Title 24 of the California Code of Regulations (CCR) are designed to comply with the requirements of the Americans with Disabilities Act (ADA) and State statutes.")

The existing Capitol Annex layout is not conducive for elected officials to work with the public. The existing structural system limits the ability to provide new large hearing rooms or auditoriums with column-free view paths and appropriate ceiling heights. Further, the seismic analysis done in 2007 recommends new concrete shear walls be added to improve the performance of the Capitol Annex during a seismic event. Interviews indicate that stakeholders believe a new Member suite layout is needed to provide consistent floor plan size and configuration. The current building footprint and column bay spacing do not allow for efficient implementation of these requests.

The design team's recommendation is to demolish the existing Capitol Annex building and construct a new larger Capitol Annex in the same location. The new Capitol Annex will be configured to remedy existing building deficiencies and enhance the ability of the facility to meet the public and private needs of the "People's House." The new addition to the California State Capitol building will provide an accessible and functional 21st century working seat of Government.

The Sun does not realize how wonderful it is until after a room is made. —Louis Kahn

INFORMATION GATHERING AND BACKGROUND

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INFORMATION GATHERING AND BACKGROUND

IDENTIFIED DEFICIENCIES

The Capitol Annex was constructed in 1952 and supports the Governor and executive staff, the Lieutenant Governor, and the Legislative Branch of Government, including offices for 115 of California's 120 State Lawmakers. The other five state lawmaker offices are in the adjacent Historic Capitol. With its proximity to the Historic Capitol, the Capitol Annex is an extremely important public asset. It provides a venue for California's public to participate in deliberative, democratic governmental processes with the Governor, the State Lawmakers, and their policy and other staff. However, as California's foremost People's House, the building's deficiencies are becoming impediments to efficient Government. The primary deficiencies include:

- Life Safety/Building Code Deficiencies
- Non-Compliance with ADA Standards for Accessible Design
- Sustainable Design Issues
- Overcrowding
- Safety of User Concerns
- Confusing Wayfinding and Public Access
- Failing Toilet and Plumbing Systems
- Aging Mechanical Systems
- Undersized Electrical Infrastructure
- Outdated Technology
- Inadequate Conferencing Spaces
- Other Public and Working Space Deficiencies

Life Safety/Building Code Deficiencies

The Capitol Annex was originally constructed under the 1949 Uniform Building Code (UBC). Today, the current code is the 2016 California Building Code (CBC). While the mission of the code has largely remained the same, there have been considerable modifications to the building codes since the 1949 UBC edition. Through our observations of the Capitol Annex in comparison to the current 2016 CBC, we found that the building has numerous code deficiencies due to its age, the number of occupants within the building, and renovations that have occurred over the years.

The 1949 UBC is a simplified version of the codes we see today, and did not take mobility into consideration. Surprisingly, occupant loads for business occupancies were calculated similar to today's methods per the CBC, but they did not guide the exiting, access and toilet facilities as they do today. For instance, per the 1949 UBC, all stairs could be a minimum of 44" wide, no matter the occupant load. In today's building code, the width of the stairwells is calculated using the occupant loads, potentially requiring the minimum width to be well over 44".

At the time it was built, the building was required to have at least two exits, as is required today, but the exit widths and distribution were calculated differently. In addition, the 1949 UBC required every building to have at least one toilet. If more were provided, it was acceptable that these additional toilets be provided in adjacent buildings. The 2016 CBC uses the occupant loads to calculate the number of toilets and lavatories required on each floor. Based on our observations, the building does not have enough toilet facilities to comply with today's codes.

Fire suppression systems within buildings were rare in 1949, and the UBC did not take these systems into account, except for a few rare instances. Today, fire suppression systems provide buildings with flexibility in construction and exiting. Door hardware and access requirements were limited in the 1949 UBC, and we observed that most doors still have knobs for access which does not comply with the 2016 CBC or the ADA Standards for Accessible Design.

Non-Compliance with ADA Standards for Accessible Design

The Capitol Annex predates (by decades) the Americans with Disabilities Act (ADA) and California's Title 24. Much of the building does not comply with respect to site access, building access, signage, built-in cabinets, plumbing fixtures, and assistive listening systems. There are numerous upgrades required to provide an ADA compliant, barrier free facility.

Definition: Assistive Listening Systems (ALSs) are sometimes called Assistive Listening Devices (ALDs). Essentially, they are amplifiers that bring sound directly into the ear. They separate the sounds, particularly speech, that a person wants to hear from background noise. They improve what is known as the "speech to noise ratio." ALSs utilize FM, infrared, or inductive loop technologies. All three technologies are considered good. (See www.nad.org)

CSHQA performed a partial accessibility survey of the Capitol Annex to determine the existing level of ADA compliance. This review was conducted by a California Accessibility Specialist, credentialed by the State of California. Our review was intended to determine a general level of compliance with current accessibility requirements, and was limited to the Fourth Floor. We selected only a few rooms to represent the condition of other similar rooms throughout the building. The rooms that were surveyed for ADA and Title 24 compliance were Hearing Rooms 4202 and 4203, Men's Restroom 4018, Women's Restroom 4025, Men's Restroom 4100, Elevator 3, Stair SE-4, and portions of the public corridor. We found that these rooms have numerous ADA deficiencies, which suggests that the entire Capitol Annex lacks ADA compliance throughout. Following are spreadsheet summaries of our findings for each room.

Meeting Room 4202 (Assembly):

Description	Complies	Measurement	Requirement
Seating			
Main Level	---	130 seats	
Mezzanine	---	98 seats	
Total		228 seats	
Wheelchair seats		± 9 (Main Level)	151-300 = 5 spaces
Path Width	NO	< 36" when someone is seated in row behind spaces	36" clear and may not overlap the seat space
Path Cross slope		>5% (Ramp)	2% maximum
Seat Dispersion		Bunched together in middle of main floor	
Companion Seats	NO	0	one per wheelchair space
Designated Aisle Seats	NO	0	5% of Aisle Seats
Semi-ambulant Seats	NO	0	1% total all seats, not less than 2
Aisles			
Back Aisle Width	YES	48" Min /6' at Doors	36" Clear
Running Slope		< 2%	5% maximum (> 5% is a Ramp)
Cross Slope	NO	< 2%	2% Max
Side Aisles Width		68" minimum	
Running Slope		>5%	Handrails each side of ramps (slopes exceeding 5%)
Cross Slope	NO	< 2%	

Meeting Room 4202 (Assembly):

Description	Complies	Measurement	Requirement
Handrails		None	
Height		N\A	
Grip		N\A	
Clearance to Wall		N\A	
Doors to Main Meeting space			
Back Pair of Doors	YES		
Width		36" Each Leaf	32" clear opening
Pull Side Landing		>60"	60"
Slope		< 2%	Level (2% maximum)
Push Side Landing		>60"	48" Min
Slope		Level < 2%	Level (2% maximum)
Strike Side Clearance Pull		36"	18"
Slope		Level < 2%	
Strike Side Clearance Push		36"	12"
Slope		Level < 2%	
Middle Single Door	NO		
Width		40"	32" clear opening
Pull Side Landing		>60"	60"
Slope		> 5% Ramp	Level (2% maximum)
Push Side Landing		>60"	48"
Slope		> 5% Ramp	Level (2% maximum)
Strike Side Clearance Pull		>18"	18"
Slope		> 5% Ramp	
Strike Side Clearance Push		>12"	12"
Slope		> 5% Ramp	
Bottom Single Door	NO		
Width		40"	32" clear opening
Pull Side Landing		>60" Landing	60"
Slope		< 2%	Level (2% maximum)
Push Side Landing		>60" Landing	48"
Slope		< 2%	Level (2% maximum)

Meeting Room 4202 (Assembly):

Description	Complies	Measurement	Requirement
Strike Side Clearance Pull		>18"	18"
Slope		>5% Ramp	
Strike Side Clearance Push		<12"	12"
Slope		<2%	
Elevated Platforms			
Tier 1 (lower) ramp access	YES	> 36"	36" Clear
Tier 2 (middle) steps	NO	< 36"	All levels shall be accessible unless exempted by 11B-203
Tier 3 (top) lift access	NO	49" to counter (< 36" behind chairs)	
Ramp to Tier 1	NO		
Width		> 36"	36" Clear Width
Slope		< 8.33%	8.33% maximum
Cross Slope		< 2%	2% maximum
Top Landing	NO	>60"x 60"	60"x 60"
Slope		< 2%	2% maximum
Bottom Landing	NO	>72"	72"x Ramp Width
Slope		< 2%	2% maximum
Handrail			Handrails Each Side
Height		32" each side	34"-38" AFF
Grip		---	1.25 – 2.5" diameter.
Clearance to Wall		---	1.5"
Top Extension		12" one side	12" Extensions top & bottom each side
Bottom Extension		None	12" Extensions top & bottom each side
Lift to Tier 3			
Path	NO	<36" behind the chairs	36" Clear
Top Landing		---	60"x 60"
Slope		<2%	
Bottom Landing		---	60"x 60"
Slope		<2%	
Steps to Tier 1			
Riser Height	NO	varies 5.5-6"	4" minimum – 7" maximum
Tread Depth		12"	11" minimum

Meeting Room 4202 (Assembly):

Description	Complies	Measurement	Requirement
Nosing		---	
Contrasting Stripe		None	At Top & Bottom Treads
Handrail	NO	32"	Handrails Each Side
Height		---	34"-38" AFF
Grip		---	1.25 – 2.5" diameter.
Clearance to Wall		---	1.5"
Top Extension		0"+ 1 Tread	12" Extensions top & bottom each side
Bottom Extension			12" Extensions top & bottom each side
Steps to Tier 2	NO		
Riser Height		varies 5.5-6"	
Tread Depth		12"	
Handrail		No Handrails	
Steps to Tier 3	NO		
Riser Height		varies 5.5-6"	
Tread Depth		12"	
Handrail		No Handrails	

Note for Meeting Room 4202: This conference room has been remodeled previously, following a code that is more than one code cycle old, and will be required to be brought into full compliance with the code, current at time of permitting.

Meeting Room 4203 (Senate):

Description	Complies	Measurement	Requirement
Seating (chairs)	---	175 (Main Level)	
	---	97 (Mezzanine)	
Wheelchair seats	NO	0	151-300 = 5 spaces
Companion Seats	NO	0	one per wheelchair space
Designated Aisle Seats	NO	0	5% of Aisle Seats
Semi-ambulant Seats	NO	0	1% total all seats, not less than 2
Aisles			
Back Aisle Width	YES	42" Min /5' at Doors	36" Clear
Running Slope		<2%	5% maximum (> 5% is a Ramp)
Cross Slope		<2%	2% Max
Side Aisles Width		>36"	
Running Slope	NO	>5% Ramp	
Cross Slope		<2%	
Handrails		None	Handrails each side of ramps (slopes exceeding 5%)

Meeting Room 4203 (Senate):

Description	Complies	Measurement	Requirement
Height			
Grip	NO		
Clearance to Wall			
Doors to Main Meeting space			
Back Pair of Doors	YES		
Width		60" opening with a 36" & a 24" Doors	32" clear opening
Pull Side Landing		>60"	60"
Slope		<2%	Level (2% maximum)
Push Side Landing		>60"	48" Min
Slope		<2%	Level (2% maximum)
Strike Side Clearance Pull		24"	18"
Slope		<2%	
Strike Side Clearance Push		24"	12"
Slope		<2%	
Middle Single Door	NO		
Width		40" Single	32" clear opening
Pull Side Landing		>60"	60"
Slope		>5% Ramp	Level (2% maximum)
Push Side Landing		>60"	48" Min
Slope		>5% Ramp	Level (2% maximum)
Strike Side Clearance Pull		>18"	18"
Slope		>5% Ramp	
Strike Side Clearance Push		>18"	12"
Slope		>5% Ramp	
Bottom Single Door	NO		
Width		40" Single	32" clear opening
Pull Side Landing		>60"	60"
Slope		<2%	Level (2% maximum)
Push Side Landing		>60"	48" Min
Slope		<2%	Level (2% maximum)
Strike Side Clearance Pull		>18"	18"
Slope		>5% Ramp	
Strike Side Clearance Push		<12"	12"

Meeting Room 4203 (Senate):

Description	Complies	Measurement	Requirement
Slope		<2%	
Elevated Platforms			
Tier 1 (lower) ramp access	YES	> 36"	36" Clear
Tier 2 (top) steps and lift	NO	< 36"	All levels shall be accessible unless exempted by 11B-203
Ramp to Tier 1	YES	< 8.33%	8.33% Max
Path	YES	> 36"	36" Clear
Handrail	NO	32" High handrail one side	34"-38" Both sides of Ramps
Extension	NO	No Top extension	12" Extensions top & bottom each side
Top Landing	YES	>60"x 60"	60"x 60"
Bottom Landing	YES	>72"	72"x Ramp width
Lift to Tier 2 (top of ramp to upper level)			
Landing	NO	Top landing < 60 wide	Landings 60"x 60"
	NO	Access <36" behind the chairs	
	NO	Open sides	
	NO	Controls behind low wall next to 1st chair	
Middle Steps to Tier 1			
Riser Height	YES	6.5"	4" minimum – 7" maximum
Tread Depth	NO	10.5"	11" minimum
Handrail	NO	No Handrail	34"-38"
Top Extension	NO	No Extension	12"
Bottom Extension	NO	No Extension	12" +1 Tread
Left Side Steps to Tier 1 (with swing gate)			
Riser Height	YES	6.5"	4" minimum – 7" maximum
Tread Depth	NO	Tread: 10.5"	11" minimum
Handrail	NO	No Handrail	34"-38"
Top Extension	NO	No Extension	12"
Bottom Extension	NO	No Extension	12" +1 Tread
Steps to Tier 2			
Riser Height	YES	varies 5.5-6"	
Tread Depth	YES	12"	
Handrail	NO	No Handrails	

Note for Meeting Room 4203: This conference room has had some alterations following a code that is more than one code cycle old to provide access to the elevated platforms, ramp and a hydraulic platform lift, and will be required to be brought into full compliance with the code current at time of permitting

Men's Restroom 4018:

Description	Complies	Measurement	Requirement
Door			
Width	NO	36" wide	32" clear opening
Pull Side Landing		> 60"	60"
Slope		<2%	Level (2% maximum)
Push Side Landing		> 48"	48" Min
Slope		<2%	Level (2% maximum)
Strike Side Clearance Pull		4"	18
Slope		<2%	
Strike Side Clearance Push		4"	12"
Slope		<2%	
Path	NO	<44" @ Urinal	44" Clear
Lavatory			
Rim Height	YES	32"	34"
Knee Space	NO	< 8"	8" Min @ 27" AFF, 11" Min @ 9" AFF
Toe Space	YES	Extends to wall	19"d x 30"w x 9"h
Distance to side wall	NO	17"	18" minimum
Clear Space	YES	OK	30" x 48"
Paper Towel Dispenser	NO	Projects more than 4" above 27" AFF	
Urinal			
Rim Height	NO	<17"	17" maximum
Projection from wall		14.5"	13.5" minimum
Flush control		47"	44" maximum
Clear space		30"x 48" stall door encroaches	30"x 48"
Accessible Stall (end opening)			
Door Width	YES	36"	32" clear opening
Door Position	YES	4" Diagonal	4" Diagonal
Clear Space	YES	61"x 60"	60"x 56" wall mounted fixtures
Maneuvering Space	YES	61" x 48"	60" x 48" clear maneuvering space in front of toilet
Toilet distance to wall	NO	15.5"	17" – 18"
Seat Height	NO	< 17"	17" – 19"

Note for Men's Restroom 4018: This restroom has had some alterations following a code that is more than one code cycle old, and will be required to be brought into full compliance with the code current at time of permitting.

Women’s Restroom 4025:

Description	Complies	Measurement	Requirement
Door	YES		
Width		36" wide	32" clear opening
Pull Side Landing		> 60"	60"
Slope		<2%	Level (2% maximum)
Push Side Landing		> 48"	48" Min
Slope		<2%	Level (2% maximum)
Strike Side Clearance Pull		>18"	18"
Slope		<2%	
Strike Side Clearance Push		>12"	12"
Slope		<2%	
Path	NO	<44" @ PT Dispenser	44" Clear
Lavatory			
Rim Height	YES	32"	34" Max
Knee Space	NO	< 8"	8" Min @ 27" AFF, 11" Min @ 9" AFF
Toe Space	YES	Extends to wall	19"d x 30"w x 9"h
Distance to side wall	NO	17"	18" minimum
Clear Space	YES	OK	60" x 48" clear maneuvering space in front of toilet
Paper Towel Dispenser	NO	<40"	40" maximum
Accessible Stall (side opening)			
Door Width	YES	36"	34" clear opening
Door Position	YES	<4" Diagonal	4" max Diagonal to Water Closet
Clear Space	YES	62"x 58"	60"x 53" wall mounted fixtures
Maneuvering Space	YES	61" x 48"	60"x 48"
Toilet distance to wall	NO	15.5"	17" – 18"
Seat Height	NO	< 17"	17" – 19"

Note for Women’s Restroom 4025: This restroom has had some alterations to provide following a code that is more than one code cycle old and will be required to be brought into full compliance with the code current at time of permitting.

Men's Restroom 4100:

Description	Complies	Measurement	Requirement
Door			
Width	NO	36" wide	32" clear opening
Pull Side Landing		< 60"	60"
Slope		<2%	Level (2% maximum)
Push Side Landing		> 48" Push Side	48" Min
Slope		<2%	Level (2% maximum)
Strike Side Clearance Pull		>18"	18"
Slope		<2%	
Strike Side Clearance Push		4"	12"
Slope		<2%	
Path	YES	49" to Urinal Screen	44" Clear
Lavatory			
Rim Height	YES	32"	34" Max
Knee Space	NO	< 8"	8" Min @ 27" AFF, 11" Min @ 9" AFF
Toe Space	YES	Extends to wall	19"d x 30"w x 9"h
Distance to side wall	YES	18.5"	18" minimum
Clear Space	YES	OK	30" x 48"
Paper Towel Dispenser	NO	Projects more than 4" above 27" AFF	
Urinal			
Rim Height	NO	<17"	17" maximum
Projection from wall		14.5"	13.5" minimum
Flush control		47"	44" maximum
Clear space		29"x 48" stall door encroaches	30"x 48"
Accessible Stall			
Door Width	YES	36"	32" clear opening
Door Position	YES	4" Diagonal	4" Diagonal
Clear Space	YES	61"x 60"	60"x 56" wall mounted fixtures
Maneuvering Space	NO	Partition encroaches into the maneuvering space	60" x 48" clear maneuvering space in front of toilet
Toilet distance to wall	NO	15.5"	17" – 18"
Seat Height	NO	< 17"	17" – 19"

Note for Men's Restroom 4100: This restroom has had some alterations following a code that is more than one code cycle old and will be required to be brought into full compliance with the code current at time of permitting.

Elevator #3:

Description	Complies	Measurement	Requirement
Hall Call Buttons			
Height	YES	39-43"	16" minimum – 48" maximum
Size	YES	.75"	.75" minimum
Shape	NO	Round	Square shoulders
Hall Signals			
Height	YES	> 7'-0"	72" Min to center
Size	YES	> 2.5"	2.5" Min high
Audible indicator	?	YES – Not measured	500Hz maximum, 10dB above ambient
Cab			
Opening Width	YES	42"	36" Min
Floor Space	YES	61" x 78"	60" x 60"
Handrail Height	YES	32" Center	31-33" to top
Handrail Grip	YES	1.25"	2.25" Max
Handrail Projection from wall	YES	1.5"	1.5"
Car Controls			
Height	YES	35-48"	16" minimum – 48" maximum
Size	YES	.75"	.75" minimum
Shape	NO	Round	Square shoulders
Emergency Controls	YES	35" center	35" center minimum

Note for Elevator #3: This elevator could be compliant with minor upgrades to the controls and verification of audible signals and door opening requirements.

Central Stair SE-4:

Description	Complies	Measurement	Requirement
Handrail			
Height	NO	32"	34 – 38"
Grip	NO	3"	2.25" Max
Projection from wall	NO	2.25"	1.5"
Treads	NO	10.75"	11" minimum
Contrasting stripe	YES	Present	Top & Bottom Riser Each Run: 2-4" wide, 1" maximum from nosing
Risers	NO	7.125"	4" minimum – 7" maximum

Note for Central Stair SE-4: This stair will require reconstruction to comply with the maximum riser height and minimum tread depth.

Corridor 4-B, Between the Two Conference Rooms:

Description	Complies	Measurement	Requirement
Floor Slope steepness exceeds that for a sloped walking surface; therefore, this is a ramp and must comply with ramp requirements	NO	Exceeds 5%	Less than 5%
Floor Slope vertical rise	NO	Exceeds 30"	30"
Handrails provided at ramp	NO	None present	Handrails required due to floor slope
Drinking fountain knee and toe clearance (typical at multiple locations in all corridors).	NO	No clearance	Knee clearance to be 30" wide, 11" deep (minimum) at 9" above the floor and 8" deep (minimum) at 27" above the floor. Toe clearance to be 30" wide, 17" deep (minimum) from floor to 9" above the floor.
Drinking fountain spout outlet height	NO	Exceeds 36"	Spout outlets shall be 36" (maximum) above floor for wheelchair accessibility and be between 38" and 43" for standing persons.
Protrusion Limits are exceeded by wood signs (typical at multiple locations in all corridors).	NO	Exceeds 4" protrusion	Objects cannot protrude more than 4" from the wall if mounted between 27" and 8" above the floor.

Corridor 4-I, Behind the Conference Rooms:

Description	Complies	Measurement	Requirement
Floor Slope steepness exceeds maximum allowable for ramps	NO	Exceeds 8.33%	8.33% is maximum allowable floor slope for ramps
Handrails provided at ramp	NO	None present	Handrails required due to floor slope
Drinking fountain knee and toe clearance (typical at multiple locations in all corridors).	NO	No clearance	Knee clearance to be 30" wide, 11" deep (minimum) at 9" above the floor and 8" deep (minimum) at 27" above the floor. Toe clearance to be 30" wide, 17" deep (minimum) from floor to 9" above the floor.
Drinking fountain spout outlet height	NO	Exceeds 36"	Spout outlets shall be 36" (maximum) above floor for wheelchair accessibility and be between 38" and 43" for standing persons.
Protrusion Limits are exceeded by wood signs (typical at multiple locations in all corridors).	NO	Exceeds 4" protrusion	Objects cannot protrude more than 4" from the wall if mounted between 27" and 8" above the floor.

Sustainable Design Issues

The existing Capitol Annex building did not factor in sustainable design or construction, which is not uncommon for 1950's construction. In the decades since the Capitol Annex was built we have come to understand that our built environment must be energy efficient, be built of sustainable materials, limit greenhouse gas emissions, and provide healthy spaces for building occupants.

Modern building codes have exterior envelope insulation requirements that far exceed the existing Capitol Annex envelope insulation. Today, mechanical, electrical, and lighting systems can be designed to a much higher efficiency level than previously. Studies have shown that persons who work in areas with natural daylight are more efficient and healthier than those who have limited access to daylight. Advances in lighting design that is integrated with available natural light far exceed what is available in the existing Capitol Annex. Modern daylight harvesting uses building controls such as light sensors to dim or turn off interior electric lights when adequate natural light is entering a space through windows or skylights. This, coupled with architectural design that enhances the potential for daylight, greatly reduces electric lighting demands during the day.

Contributing to healthy environments, interior components, finishes, paints, and sealants are now available that have no or reduced emissions of harmful or toxic chemicals. This level of understanding was simply not available in 1952. Lastly, owners of buildings, along with the design and construction industry, have an obligation to reduce the global warming potential of buildings. The aging construction and systems within the Capitol Annex are not able to operate at an efficient level, and a new or remodeled Capitol Annex would be an opportunity for long-term reduction of global warming potential.

Part 6 of the Title 24 Building Standards Code is the Building Energy Efficiency Standards for the State of California, and Part 11 of Title 24 is the California Green Building Standards Code, also known as CALGreen. All newly constructed buildings on new or existing sites shall comply with these code requirements. These codes are among the most advanced in the world for sustainable design and would be applied by the design team moving forward with a new or remodel project. Further, any new large-scale construction must be a minimum of LEED Silver per Executive Order B-18-12. A minimum LEED goal for the Capitol Annex is LEED Silver. If the goal is to be an example for California, we suggest a LEED goal of Gold or even Platinum. Many of the California businesses have adopted and executed construction for LEED Gold and Platinum. Ultimately, the new or renovated Capitol Annex should strive to be among the most energy efficient Capitol buildings in the nation.

Design elements to be considered to achieve this goal include the following:

- Space design
- Fewer isolated spaces requiring lighting and conditioning
- Wall locations that support efficient HVAC air flow and quality daylighting
- Double entry system (e.g. vestibule) at main entrance to keep out hot and cold exterior air
- Appropriate sound isolation and reduction of noise/sound over-stimulation

Materials Selection

- Easily cleaned and maintained materials and surfaces to reduce cleaning times
- Durable materials to reduce long-term replacement costs and landfill waste
- Low or no emissions materials, finishes, and furniture to support healthy environments
- Natural materials
- Consistent use of materials throughout

HVAC Systems

- Efficient heating and cooling units with highly efficient motors
- Equipment sized correctly for the anticipated use
- Fresh air quality and volume appropriate for its use to create a healthy working environment

- Fresh air intakes remote from exterior contaminates
- Integrated Control Systems manage energy use relative to time of day, external temperatures and seasons

Lighting Systems

- Daylight harvesting uses natural light whenever possible
- LED lighting with automatic controls are efficient, cost effective and reliable
- Operable window coverings allow human control of exterior lighting and glare
- Integrated Control Systems apply light sensing, motion sensing and time of day/week/holiday
- Interior glass – clerestory windows and interior walls transmit daylight into interiors

Water Conservation

- Low use water fixtures for toilet rooms and break rooms
- Filtered water drinking fountains with water bottle filling stations greatly reduce plastic bottle use and associated trash stream
- Low water use landscaping adjacent to the Capitol
- Use water recycling systems

Low-Voltage Systems for Energy Efficiency

- Integrated control system to reduce energy use
- Lighting system controls linked to available daylight
- Remote tracking and control of HVAC and electrical systems by facilities management

Power Generation

- Opportunities for local power generation such as rooftop photovoltaic panels

General Measures

- Reduce the overall environmental footprint

Overcrowding

Overcrowding is due to two factors. First, governmental functions have pushed the building to overcapacity with respect to office space, available conference rooms, hearing rooms, circulation areas, and support spaces. Second, the entire Capitol Building strives to be open to the public. More than 1.5 million people visit the California State Capitol Building each year. Visitors include those interested in meeting with elected officials, as well as tourists and school children. The Capitol Annex and Historic Capitol constitute the “People’s House,” and it is important that the building maintain this relationship with the citizens of California, the Nation, and the international community.

Occupants have been dealing with overcrowding for years. Office suites are completely full, leading to support spaces being located in the hallways. It is common to see printers, copiers, bottled water, and waiting areas located in the hallways. It is assumed that the hallways were originally sized per the anticipated occupant loads and with respect to exiting. Equipment in the hallways not only gives the spaces a ‘cluttered’ feel, it can also reduce the required exiting widths.

For those Members elected since 2012, the 40 Senators and 80 Assemblymembers are held by voters to a maximum tenure of 12 years. Members recognize that they must be as efficient as possible within their term. Eliminating or alleviating the deficiencies with the building will allow the Members to better perform their constitutional duties and increase their productivity.

Overcrowding can also lead to life safety issues such as excessive occupant loads. CSHQA has calculated the allowed number of occupants on each floor based on current uses and the maximum floor area allowance for each occupant per the 2016 California Building Code. Refer to the “California State Capitol Annex Project Building Use Evaluation – Occupant Load Spreadsheet” on the next page. This indicates a total existing occupant load for the Capitol Annex of 4,026 persons. Note that this evaluation factors in the Capitol Annex public corridors as occupied space with an occupant load factor of one person per every 50 square feet of corridor area. This factor was included because the corridors are used for informal meeting space and tours for members of the public who would not otherwise be in the building. The data following the spreadsheet indicates that the existing exit widths at floors two, three, four, and five do not meet the 2016 California Building Code.

California State Capitol Annex Project Building Use Evaluation—Occupant Load Spreadsheet

This spreadsheet shows how many people can occupy the building per the methods for determining occupancy as described in the current code (2016 CBC). This allows us to determine required egress width and plumbing fixture counts required by code. The occupancies shown here are theoretical and actual building occupancies may be different than what is indicated. Occupant Load Factors and Total Occupancy are listed and tallied as the number of people per each type of space with total occupant loads shown per floor (number of people allowed to occupy each floor per code). Occupant loads for rooms with fixed seats are calculated by counting the number of seats available.

Floor Number	Square Footage	Function of Space	Occupant Load Factor (area per person)	Total Occupancy
Basement	40,477	Parking Garage	200	203
Basement	4,478	Storage, Mech, and Equipment areas	300	15
Basement	6,105	Business/ Office areas	100	62
				Total: 280
First Floor	3,190	Storage, Mech, and Equipment areas	300	11
First Floor	28,529	Business/ Office areas	100	286
First Floor	3,344	Conferencing rooms with tables and chairs	15	223
First Floor	7,107	Public Corridors as occupied space due to meetings and tours occurring within	50	143
				Total: 663
Second Floor	1,352	Storage, Mech, and Equipment areas	300	5
Second Floor	1,022	Hearing Room 2040 with fixed seats	By seat count	73
Second Floor	35,611	Business/ Office areas	100	357
Second Floor	8,047	Public Corridors as occupied space due to meetings and tours occurring within	50	161
				Total: 596
Third Floor	1,344	Storage, Mech, and Equipment areas	300	5
Third Floor	2,650	Conferencing rooms with tables and chairs	15	177
Third Floor	1,244	Hearing Room 3191 with fixed seats	By seat count	85
Third Floor	30,842	Business/ Office areas	100	309
Third Floor	480	Women's Lounge Room 3197-C	50	10
Third Floor	7,835	Public Corridors as occupied space due to meetings and tours occurring within	50	157
				Total: 743

Floor Number	Square Footage	Function of Space	Occupant Load Factor (area per person)	Total Occupancy
Fourth Floor	1,325	Storage, Mech, and Equipment areas	300	5
Fourth Floor	5,351	Hearing Rooms 4202 and 4203 with fixed seats	By seat count	336
Fourth Floor	29,199	Business/ Office areas	100	292
Fourth Floor	8,434	Public Corridors as occupied space due to meetings and tours occurring within	50	169
				Total: 802
Fifth Floor	1,903	Storage, Mech, and equipment areas	300	7
Fifth Floor	1,890	Hearing Rooms 4202 and 4203 upper balconies with fixed seats	By seat count	196
Fifth Floor	162	Conferencing rooms with tables and chairs	15	11
Fifth Floor	30,048	Business/ Office areas	100	301
Fifth Floor	8,068	Public Corridors as occupied space due to meetings and tours occurring within	50	162
				Total: 677
Sixth Floor	980	Storage, Mech, and equipment areas	300	4
Sixth Floor	897	Commercial Kitchen area	200	5
Sixth Floor	1,754	Dining area with tables and chairs	15	117
Sixth Floor	9,234	Business/ Office areas	100	93
Sixth Floor	1,879	Public Corridors as occupied space due to meetings and tours occurring within	50	38
				Total: 257
Mechanical Level	2,117	Storage/ Mech, and equipment areas	300	8
				Total: 8

Total Occupancy Load Including Corridors 4,026

Note 1: The above information was generated from the AutoCAD floor plan, the existing function of each space, and Table 1004.1.2 of the 2016 California Building Code.

Note 2: Corridors are shown to have an occupant factor of one person per every 50 square feet since corridors are used for meeting space, tours, and contain copy machines, storage cabinets, and display cases.

Exit Study

The adjacent spreadsheet is a breakdown of Capitol Annex occupant load per floor, the amount of exit width required for doors and stairs, the amount of exit width provided for doors and stairs, and whether the floor meets current California Building Code required exit widths for doors and stairs. Occupant loads shown are theoretical, however what is shown is the Code method for determining required exit widths. Note that the Historic Capitol was not considered in these calculations.

Notes on exiting from the building:

1. Each floor of the Capitol Annex has the required number of exits; however, as indicated, the door and stair exit widths at floors two, three, four, and five do not meet the 2016 California Building Code. Each floor is individually reviewed for exit width as mandated by the CBC; the required door exit width of any floor is not impacted by the occupants of the floors above. The required stair exit widths do need to be continuous down to the first floor.

2. The exit study does not include any Historic Capitol occupants.

3. The exit study is based on the exit system provided in the Capitol Annex only and does not include any exiting through the Historic Capitol. The Historic Capitol currently has no available code compliant exits.

4. The width required per occupant indicated for doors and stairs is based on the 2016 California Building Code for a building without a complete fire suppression system (automatic sprinkler system).

5. For everyday use the stairways, in particular, are undersized and therefore easily congested, which in turn leads to congestion at the corridor locations where they connect. There has been at least one fire drill in the last two years. It led to some personnel having difficulty merging with the number of persons already trying to exit down through the stairways.

Floor	Occupant Load (Number of People)	Door Exit Width: 0.2"/ Occupant is Required		Stair Exit Width: 0.3"/ Occupant is Required		Notes
		Required	Provided	Required	Provided	
Basement	280	56" exit width required	105" exit width provided, therefore OK	28.2" exit width required	52" exit width provided, therefore OK	Only ⅓ of the basement occupant load uses the stair, so 280 persons/3 = 94 persons. 94 persons x .3"/occupant = 28.2" required stair width.
First Floor	663	132.6" exit width required	355.5" exit width provided, therefore OK	Not applicable	Not applicable	No stair exit width analysis needed for the First Floor since everyone exits directly to the exterior.
Second Floor	596	119.2" exit width required	114" exit width provided, therefore not code compliant	240.6" exit width required	170.25" exit width provided, therefore not code compliant	The required stair width of 240.6" is to maintain the fourth floor width down to the first floor. The actual calculated stair width requirement for this floor based on occupancy is 178.8"
Third Floor	743	148.6" exit width required	114" exit width provided, therefore not code compliant	240.6" exit width required	170.25" exit width provided, therefore not code compliant	The required stair width of 240.6" is to maintain the fourth floor width down to the first floor. The actual calculated stair width requirement for this floor based on occupancy is 222.9".
Fourth Floor	802	160.4" exit width required	114" exit width provided, therefore not code compliant	240.6" exit width required	170.25" exit width provided, therefore not code compliant	
Fifth Floor	677	135.4" exit width required	114" exit width provided, therefore not code compliant	203.1" exit width required	170.25" exit width provided, therefore not code compliant	
Sixth Floor	257	51.4" exit width required	110" exit width provided, therefore OK	77.1" exit width required	173.5" exit width provided, therefore OK	
Mechanical Penthouse Level	8	1.6" exit width required	68" exit width provided, therefore OK	2.4" exit width required	48" exit width provided, therefore OK	This level is unoccupied mechanical rooftop equipment enclosures.

Safety of User Concerns

Security concerns for the Capitol Annex include “dead spots” for communication, a lack of impact resistant glazing (windows, etc.) in some locations, crowded hallways, crowded public hearings, and the need for a stronger command/communication center. The loading dock location and loading dock processes need to be evaluated and improved. Relocating the vehicle parking to a new underground garage on the south side of the building and moving the loading dock away from the Capitol Annex, would greatly reduce security concerns. This solution would also enable Sacramento Municipal Utility District (SMUD) electrical gear to be relocated.

Confusing Wayfinding and Public Access

The California Capitol building is the political hub of the most populous state in America, but access into the building is limited to three screening centers. Members and staff share these entries with tourists, students, and other members of the public. In July 2017 alone over 168,000 persons entered the building, creating bottlenecks once the visitors enter the building. There are existing signs around and on the Capitol grounds that provide general street, building, and park information, but specific signs for first time visitors to the Capitol are limited. The visitor experience to the building begins at the edge of the park, but from that edge most visitors move towards the Capitol until they realize that they must enter via the Capitol Annex.

Failing Toilet and Plumbing Systems

We understand there have been several domestic water line leaks within the building causing damage at the point of the leak and to floors below. Impacts on staff productivity were significant. So were the costs for repair. The plumbing system is aging and local repairs will be required until the lines are comprehensively upgraded.

The California Plumbing Code prescribes quantities of toilets, urinals, lavatories, drinking fountains, and service sinks for office buildings. The Capitol Annex falls short on most required plumbing fixtures. As a result, toilet rooms are often crowded and there is an insufficient quantity of janitor’s closets. While some floors do meet the required number of drinking fountains, many of them are located in private or semi-private suites and are unavailable to the general staff. In addition, the drinking fountains do not provide filtered water and cannot fill water bottles, so personnel who work in the building have resorted to having bottled water delivered to their suites. Storage and delivery of bottled water takes up room in the suites and contributes to the congestion in the corridors. Another acute concern is the lack of well-pressurized drinking fountains providing filtered water as well as service dog watering stations within the building and on the Capitol Park grounds.

Refer to the attached plumbing fixture plan analysis based on the requirements of the 2016 California Plumbing Code. Each floor of the building has plumbing deficiencies, and the analysis indicates what is not code compliant.

Plumbing Fixture Plan Analysis Based on The Requirements of the 2016 California Plumbing Code

Floor	Occupant Load	Water Closets		Lavatories		Drinking Fountains	Service Sinks	Notes
		Male	Female	Male	Female			
Basement	280	four required	four required	three required	three required	two required	two required	
	(140 Male and 140 Female)	four provided plus three urinals therefore OK	one provided therefore not code compliant	five provided therefore OK	one provided therefore not code compliant	0 provided therefore not code compliant	one provided therefore not code compliant	
First Floor	663	seven required	eight required	four required	four required	four required	two required	
	(332 Male and 332 Female)	four provided plus five urinals therefore OK	seven provided therefore not code compliant	four provided therefore OK	five provided therefore OK	five provided therefore OK	one provided therefore not code compliant	There are three private water closets in addition to these indicated in this chart.
Second Floor	596	six required	seven required	five required	five required	five required	two required	
	(298 Male and 298 Female)	three provided plus two urinals therefore not code compliant	five provided therefore not code compliant	two provided therefore not code compliant	six provided therefore OK	five provided therefore OK	one provided therefore not code compliant	
Third Floor	743	seven required	nine required	six required	six required	five required	two required	
	(372 Male and 372 Female)	nine provided plus eight urinals therefore OK	nine provided therefore OK	eight provided therefore OK	eight provided therefore OK	seven provided therefore OK	0 provided therefore not code compliant	one additional private water closet in addition to those indicated on chart
Fourth Floor	802	eight required	nine required	five required	five required	six required	two required	
	(401 Male and 401 Female)	five provided plus four urinals therefore OK	six provided therefore not code compliant	four provided therefore not code compliant	five provided therefore OK	eight provided therefore OK	two provided therefore OK	
Fifth Floor	677	seven required	eight required	four required	four required	five required	two required	
	(339 Male and 339 Female)	three provided plus three urinals therefore not code compliant	seven provided therefore not code compliant	three provided therefore not code compliant	five provided therefore OK	seven provided therefore OK	0 provided therefore not code compliant	two additional private water closets in addition to those indicated on chart
Sixth Floor	257	five required	five required	three required	three required	three required	two required	
	(129 Male and 129 Female)	one provided plus one urinal therefore not code compliant	two provided therefore not code compliant	one provided therefore not code compliant	two provided therefore not code compliant	0 provided therefore not code compliant	one provided therefore not code compliant	
Mechanical Level	8	0 required		0 required		0 required	0 required	
	(four Male and four Female)	0 provided therefore OK		0 provided therefore OK		0 provided therefore OK	0 provided therefore OK	

Note: The “Occupant Load” is the number of persons on each floor. This number is calculated per the existing function of each space and Table 1004.1.2 of the California Building Code, with additional occupants added since the public corridors are being used for meeting areas, display areas, and work areas; see Occupant Load spreadsheet above. The Occupant Load includes those who work in the building as well as tourists/ visitors.

Aging Mechanical Systems

California Capitol staff have indicated that a great deal of time, money, and effort is spent by DGS and outside contractors to keep room temperatures comfortable for the occupants. There are near-daily complaints of occupants being too warm or too cold. DGS strives to correct these problems as they occur but they are limited by the existing HVAC system. Also, during times of high occupancy, such as when several high-profile issues are being considered at the same time, the humidity level climbs rapidly and noticeably on the upper floors.

Undersized Electrical Infrastructure

Some components of the Capitol Annex electrical system have been upgraded, but this has been limited to local areas rather than a comprehensive building upgrade. It has been stated by DGS and legislative facility leadership that there is not enough infrastructure for the current electrical load. CSHQA performed an electrical service evaluation based on available documents, and per the 2010 Capitol Annex Power Riser Diagram As-Built drawings, the existing electrical service equipment is indicated at 3,000 amps. Utilizing RSMeans (Table D5010-1151—Nominal Watts per square foot for Electric Systems for various Building Types), and information for electrical lighting loads allowed in order to meet Title 24 Compliance, a load of 3,500 amps at 480Y/277 volt, three-phase, four-wire is estimated for this building type with a 4000-amp service recommended. Refer to Electrical Service/Distribution Study spreadsheet on the following page. Also, based on the existing electrical system drawings, the distribution of power throughout the building does not appear to have isolation per floor. This means that large portions of the system spanning multiple floors would require power interruption if some types of work are required.

There are more occupants in the building than planned, which also puts a burden on the electrical system. LED lamps have been installed in some areas but not throughout. There are a few occupancy sensors but not everywhere. The lack of occupancy sensors, as well as the use of desk lights, leads to numerous lights being left on after hours. The system predates modern office equipment needs. In many ways, the building is supporting 2017 modern electronics on a backbone of 1952 infrastructure.

The rooftop generators currently provide backup power to emergency lighting, California Highway Patrol dispatch, and limited elevators and telecommunications closets. It has been communicated that the generators are insufficient.

A comprehensively re-tooled electrical system and associated backbone will permit integration of:

- Public access technologies: Assistive listening, electronic directories (showing hearing schedules and other information), televising hearings, spill-over hearing capacity capabilities, and other participatory democracy innovations.
- Public safety systems: Automated building monitoring systems, smoke and fire detection and suppression, updated security and communication technologies, and reporting/monitoring systems and facilities.
- Infrastructure and facilities to provide media support.

A new electrical service system is recommended. It would provide power for current and future electrical needs and be more reliable. A new system would be designed to provide isolation of system loads so that in the event of local remodels smaller portions of the building would be impacted. Lastly, a new system would be fully code compliant.

Floor	Other Space	Gross Electrical Area	Lighting Design (Watts per SF)	Calculated Lighting (Watts per SF)	Devices Design (Watts per SF)	Calculated Devices (Watts per SF)	HVAC Design (Watts per SF)	Calculated HVAC (Watts per SF)	Miscellaneous Design (Watts per SF)	Calculated MISC. (Watts per SF)	Total Watts
Basement	(Parking Garage)	39,857 sf	0.2	8,098		0		0	0.5	20,246	28,344
	(Offices)	21,279 sf	0.8	63,836	2	42,558	4.7	21,279	1.2	21,279	148,951
First Floor	(Offices)	59,761 sf	0.8	47,809	2	119,522	4.7	280,877	1.2	71,713	519,921
	(South Light Court)	2,053 sf	0.5	6,158	0	0	0	0	0	0	6,158
Second Floor	(Offices)	54,330 sf	0.8	43,464	2	108,660	4.7	255,351	1.2	65,196	472,671
Third Floor	(Offices)	53,638 sf	0.8	42,910	2	107,276	4.7	252,099	1.2	64,366	466,651
Fourth Floor	(Offices)	48,068 sf	0.8	38,454	2	96,136	4.7	225,920	1.2	57,682	418,192
	(Senate Space)	2,590 sf	1.2	3,108	2	6,216	3.3	20,513	1.2	24,615	54,452
	(Assembly Space)	2,761 sf	1.2	3,313	2	6,626	3.3	21,867	1.2	26,241	58,047
Fifth Floor	(Offices)	51,380 sf	0.8	41,104	2	102,760	4.7	241,486	1.2	61,656	447,006
	(Senate Space)	945 sf	1.2	1,134	2	2,268	3.3	7,484	1.2	8,981	19,868
	(Assembly Space)	1,094 sf	1.2	1,313	2	2,626	3.3	8,664	1.2	10,397	23,000
Sixth Floor	(Offices)	16,991 sf	0.5	8,496	2	33,982	4.7	79,858	1.2	20,389	142,724
	(Cafeteria)	2,328 sf	1.2	2,328	2	4,656	6.8	15,830	1.7	3,958	26,772
Mechanical Level	(DGS space)	2,185 sf	0.8	1,748	2	4,370	4.7	10,270	1.2	2,622	19,010
	Accumulative Gross Total:	359,260 sf									2,851,766 watts
											3,432 amps

Existing Electrical Service Size: 3000 Amps
277/480v, 3P, 4W
Estimated Required Electrical Service Size: 3,432 A
277/480v, 3P, 4W

Notes:

1. The existing peak demand for the building should be obtained from the utility company to verify existing usage.
2. Calculation for new service includes consideration for Title 24 requirements.
3. Mechanical system for existing building is a dual duct system which is not efficient

Outdated Technology

According to IT management and legislative facility leadership, and similar to the electrical infrastructure, the Annex telecommunication system is outdated and in need of a comprehensive upgrade. The IT closets are not secure and typically not properly vented. In some locations the closets are also used for storage. A comprehensively updated telecommunications system would support many of the benefits listed under electrical infrastructure above.

Inadequate Conferencing Spaces

Based on discussions with Members and staff, the existing floor plan layout includes insufficient quantities and sizes of conference rooms. As a result, informal meetings occur in open office spaces or other partially occupied areas. Members and staff also state that there is an insufficient quantity of more formal committee rooms and caucus rooms; these rooms are often overbooked or are too small. There are currently only four dedicated hearing rooms within the Capitol Annex: Rooms 2040 (Senate), 3191 (Senate), 4202 (Assembly), and 4203 (Senate). At times the Assembly Rules Committee Room 3162 is also used as a hearing room. Public attendance at controversial hearings is increasing and there have been many instances where there was not enough room for all public to attend.

Conference rooms and formal hearing rooms are present in the Historic Capitol, and can be used by Capitol Annex personnel, however these rooms suffer from the same problems as the Capitol Annex rooms. They are very cramped and the adjacent corridors are undersized. It is difficult for persons in wheelchairs to navigate and exiting from these areas in an emergency presents unique difficulties due to the mismatch between the floors of the two buildings. Non-ADA compliant hardware is also prevalent in the Historic Capitol which creates additional challenges for those requiring accessibility assistance.

During our studies, we were told on several occasions that the best fallback meeting space in the Capitol Annex was the corridor. This overflow meeting methodology creates a higher occupancy load in the corridor system than was probably originally calculated. This leads to an over-occupancy of the building's exit structure at high use times. Hallway meetings also produce a significant sound level which, due to the reverberation off hard surfaces, makes for a noisy environment. While this energetic environment is part of the current process, it can be difficult on the hearing disabled and the visiting public who are not accustomed to being in the building. Sound also limits the security personnel's ability to direct people when needed.

Other Public and Working Space Deficiencies

Numerous staff amenities are outdated, missing or not working properly. This leads to complaints and unproductivity. As noted, the Capitol Annex has exceeded maximum capacity. Staff are often working in overcrowded environments, with multiple workstations located in a single office. Many of these office suites contain small kitchenettes squished into tiny alcoves with appliances stacked two or three high. These kitchenettes often do not contain sinks, leading some staff to rinse their dishes in the drinking fountains or bathroom sinks. Kitchenettes that do have sinks do not have garbage disposals, and food waste gets stuck in the drains.

REVIEW OF EXISTING DOCUMENTS

Drawings

CSHQA was provided the following Capitol Annex construction documents:

- Various Capitol Park Drawings (includes AutoCAD and PDF files)
- Floor Plans of the Capitol (includes AutoCAD of Capitol Annex and Historic Capitol)
- Annex Structural Drawings (TIF scans)
- Annex Re-Roof Plans (AutoCAD and PDF. Includes As-Built PDF drawings)
- Annex Mechanical HVAC Drawings (PDF files)
- Annex Mechanical As-Built Drawings (PDF files)
- Annex SE and NE Fan Room Replacement Drawings (As-Built PDF files)
- Annex Electrical Panel and Transformer Replacement (includes AutoCAD and As-Built PDF files)
- Energy Management System Diagram Drawings (AutoCAD)
- Capitol Restoration Archive Scans (TIF scans)

CSHQA reviewed the provided documents, with our efforts primarily focused on the floor plans of the Capitol Annex. We then reviewed the building on August 15 and 16, 2017 to confirm the accuracy of the AutoCAD floor plans. During this review, we walked the building to verify the current floor plan configurations, and were able to determine that the AutoCAD floor plans provided to CSHQA appear to be accurate.

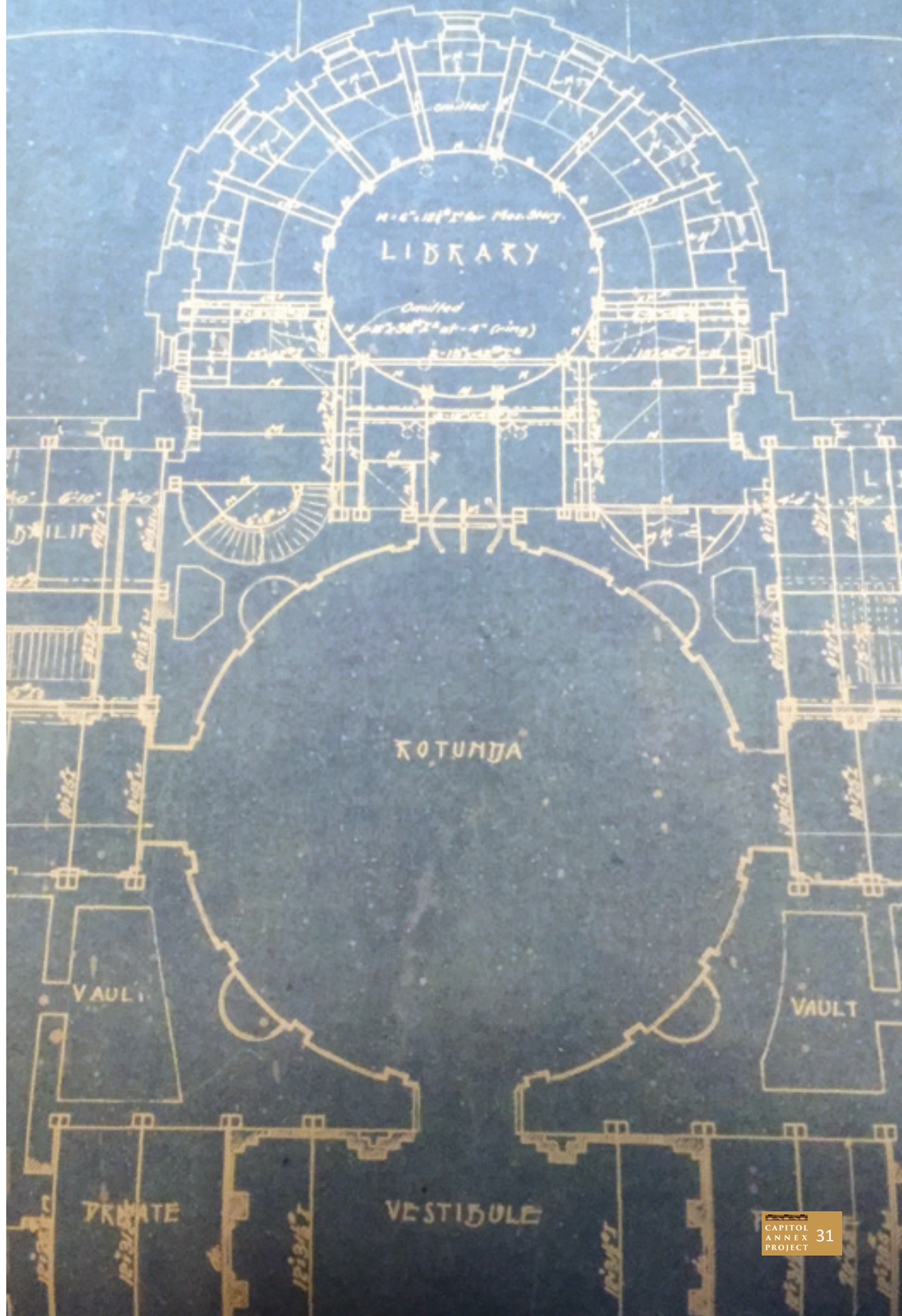
There were a few areas on each floor where the AutoCAD floor plans did not match existing interior walls or door locations. These minor revisions have been incorporated into the drawings. CSHQA also performed a cursory review to verify that the braces and bearing walls shown on the structural drawings appear to be accurate, and we did not notice any differences between the drawings and what was observable to us.

Our review of the building did not include measuring the building vertically or horizontally, or any destructive analysis. Our review of the building was done to a level where we could be confident that the available drawings can be used as a basis of programming.

CSHQA did not perform a review of the site immediately around the Capitol Annex. This will need to be done if building expansion becomes part of the project.

The AutoCAD floor plan drawings provided to CSHQA include information that indicates which entity controls each room. From these, CSHQA was able to generate color coded PDF files that indicate which parts of the building are used by the Assembly, Senate, Governor, Lieutenant Governor, Parks and Recreation, DGS, Legislative Counsel, Finance, California Highway Patrol, and the Café. These drawings are incorporated into this report as separate documents to maintain confidentiality and security of the building plans. This information is useful for analyzing how much area each entity currently uses, and will be compared to what area is recommended for the future. This information also reveals how much area is used by corridors, stairways, and light wells. For the purposes of this report the drawings were reviewed by the Client and we were informed of minor corrections which were incorporated into the drawings.

Refer to APPENDIX A – Color Coded Use Diagrams*, provided under separate cover.*



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Reports

CSHQA was provided with the following written documents:

- Infrastructure Study, Volume 1 and Volume 2, Prepared by DGS, August 18, 2006. (see below for Executive Summary).
- Real Estate Division Guidelines, issued by DGS, September 2017.
- FEMA Building Vulnerability Assessment Checklist, Prepared by the Department of Veterans Affairs.
- Schedule of 2017-2018 Regular Session Assembly Committee Meetings, July 21, 2017.
  - Lists the rooms and schedule of committee meetings.
- DGS Facilities Status Update, April 28, 2017.
  - Summarizes the draft conceptual relocation plan from 2013.
  - Estimates visitors and occupants of the facilities.
- DGS State Capitol Infrastructure Update, DGS, May 2017.
- Assembly Staff by Office, August 2017.
- Senate Staff, October 2017.
- Phone List Capitol, LOB and Other Support Offices, September 25, 2014.
- Committees in Legislative Office Building (LOB), August 23, 2017.
- Committees in Capitol, August 23, 2017.
- The California Legislature: Projected Space Requirements and Evaluation of Alternatives to Accommodate Future Growth, Prepared by Economics Research Associated, November 20, 1973.
  - Analysis of current space needs required if the system is brought up to acceptable space standards; the short-term needs projected for 3-5 years; long-range space requirements.
  - Includes many tables with quantities of staff per department.
- Legislative Space Requirements Study, California Legislature, Prepared by Reel/Grobman and Associates, November 16, 1973.
  - Includes a comparison of projections for current (1973), 1992 and 2000 time frames.
  - Includes sketches of projected space/size standards.
  - Includes analysis of parking needs.
- Building Space Needs Study, Joint Committee on Legislative Building Space Needs, Prepared by Office of Architecture and Construction, Principal Architect, January 3, 1969.
  - Very detailed tabulation of existing areas by department and space allocation.
  - Includes quantities and square footage.
  - Based on present (1968) and projected to 1975 needs.
- Report of the Joint Committee on Legislative Space Needs, Prepared by Senator Randolph Collier, Chairman, September 8, 1969.
  - Growth factors from 1850-1969.
  - Overall space estimates in word format.
- Capitol Park Memorial and Significant Tree Plan
- Capitol Park Tree Survey, Prepared by ECORP Consulting, Inc. May 28, 2014

The historical reports (Prepared prior to 1980) are to some extent redundant, but do include usable historical needs analysis that document recommendations for additional space that was thought to be needed at that time. The data is not consistent between reports and it does not seem that they referenced or built upon data from one to another. One of the most useful reports is from the Office of Architecture and Construction (1969) which tabulates every office by department with its space allocation. The 1969 document was used to formulate what may become the basis of a programming spreadsheet. In general, these reports were not acted upon, but they do provide a backstory of a long-term need for additional space within the building. Moving forward, we will review growth factors and trends as recommendations are made for future space needs.

Infrastructure Study, Volume 1 and Volume 2, Prepared by DGS, August 18, 2006
Excerpt of the Volume I Executive Summary (pages 1.1 through 1.5)

"1.0 Executive Summary

1.1 PURPOSE

In order to provide for the continued protection of one of the most valuable assets in the State of California's facilities inventory this study report identifies and quantifies current and anticipated deficiencies in the California State Capitol Building (building 01) that compromise the comfort, safety, and longevity of the building. This report then identifies remedies to these deficiencies, with the goal of upgrading and maintaining the structure for at least the next 50 years.

To assist the Department of General Services (DGS) in fulfilling this goal, this report includes a Scheduled Maintenance Program covering a range of tasks from daily cleaning duties and techniques, to long-term equipment replacement and preventative maintenance. This schedule has been developed based on priorities and probable costs of deficiency remedies identified throughout this report.

Also identified in this report are remedies and methods intended to upgrade and maintain the State Capitol that are more environmentally sustainable.

1.2 HISTORY AND CONTEXT

The California State Capitol Building we see today in the heart of Sacramento may be considered two buildings in one. The historical portion of the Capitol, referred to as the "Capitol" began construction in 1860 and was completed in 1874, housing the Executive branch, Assembly, Senate, state Supreme Court, and state library and archives. After many decades of alterations and departments expanding and moving to other buildings, the Capitol Annex was constructed from 1949 to 1951.

As the Capitol completed its first century of use, it became clear the structure fell far short of modem earthquake resistance standards, and could no longer functionally support the offices it was designed to house. Thus, began the major rebuilding and re-creation of the historic Capitol from 1975 to 1982, resulting in a showcase structure that now functions as a living museum featuring the California state government of today and its history. The reconstruction of the Capitol was so extensive, in fact, that only the exterior skin and a few areas of interior finishes are actual historical fabric. The guideline used to re-create the Capitol included reusing what was determined to be historic fabric with reproduction materials. The focus of the re-creation was to rebuild the Capitol into a working museum that resembled, to varying degrees, its general 1900 to 1910 appearance.

The Capitol Annex contains a parking garage in its basement, offices for the Executive branch on the first floor, and offices for the Assembly and Senate on its upper floors. The Capitol Annex, however, is now approaching a similar condition that the Capitol exhibited 30 years ago: that its functional ability to safely and efficiently house the offices of the Legislative and Executive branches is far short of modern standards. Much of the mechanical and electrical equipment throughout the building is original, and has reached or surpassed its life expectancy. These deficiencies have been exacerbated by frequent renovations on the upper floors as the elected office-holders change. For this reason, a significant portion of this report focuses on deficiencies and remedies for the Capitol Annex that preserve the now historical and architectural significance of its exterior and public interior spaces.

1.3 RECOMMENDATIONS SUMMARY

As both the Capitol and Capitol Annex have areas of historic significance, it is recommended that maintenance, repairs, and upgrades proposed in this report be performed with consideration given to the cultural value of existing building elements. The Historic Structure chapter in Volume II of this report identifies the level of significance of most areas in the Capitol. However, a complete inventory of historic building fabric has never been performed on either the Capitol or Capitol Annex.

A maintenance, restoration and usage policy should be established before any major repairs, maintenance or long-term projects are performed. Using current national and international restoration Guidelines on the restoration and maintenance of historic buildings with the Historic Structure Report can help determine this overall policy.

1.3.3 BUILDING ENVELOPE

Roofing. The existing roof conditions on both the Capitol Annex and Capitol of the Capitol consist of two roof systems, one on top of the other. Based on samples taken in several parts of the roof, there is moisture resent within both systems. This moisture penetration, coupled with signs of wear and deterioration on the existing membrane roof require a complete removal of existing roof systems down to the structural decks, and installation of a new insulation and roof system.

Decks and Balconies. The three ceremonial balconies on the Capitol are exhibiting prevalent surface staining and leakage, as evidenced by damage to granite panels below. This damage is largely due to an inappropriate deck design that does not adequately shed water from its surface. The problem must be waterproofing corrected by removal of the existing marble flooring and underlying and flashing. A new interior drainage system should be installed, in concert with re-sloping, re-waterproofing, and re-tiling the balconies. Repair and recoating of the deck above the Capitol Annex loading dock is also required. The Capitol Annex light wells are improperly waterproofed, and will require improvement in drainage lines, a new waterproofing membrane, re-flashing, and new walking surfaces.

Walls. The first story of the entire building is sheathed in gray granite panels. Spalling in several panels is evident, in some places due to water leaks from surfaces above, and in other places from excessive irrigation spray onto the stone. (CSHQA edit: A spall is a flake or piece of material that is broken off a larger solid body. Spalling can be produced by a variety of mechanisms, including projectile impact, corrosion, or weathering). Replacement of damaged and mismatched panels will be required, as will periodic repointing and waterproofing of mortar between panels. Decorative iron features on the Capitol exhibit some corrosion, and will require an annual inspection, repair, and recoating program to maintain their integrity. Remaining exterior walls are cement-plaster with an acrylic coating. This coating will require periodic inspection, repair, and recoating.

Windows and Doors. The existing Capitol Annex windows are dual-pane anodized aluminum, many of which are tinted, and many with copper shade/privacy screens. Many of these windows have failed thermo-pane seals, corrosion, and damaged flashing and screens; they have reached their expected service life. Replacement of all Capitol Annex windows is recommended with new energy efficient windows that include heat reflective glass. The Capitol windows are single-pane wood that are generally in good condition. However, they are inefficient by today's standards, and may be considered a security liability. Their replacement in the next 50 years is likely, for which more efficient and impact-resistant units should be considered.

Below-grade Waterproofing. There is currently not a problem with below-grade moisture into the Capitol building, except for some moisture intrusion through basement walls on the north side of the Capitol. To prevent future problems, however, it is recommended that any existing foundation waterproofing be repaired, and the entire foundation perimeter be coated with a new waterproofing coat. This in conjunction with conversion of the irrigation system to drip nozzles will dramatically reduce intrusion risk, as well as save water and reduce damage to exposed stone panels.

1.3.4 VERTICAL CONVEYANCE SYSTEMS

Elevators. The 13 elevators in the Capitol Building are being well maintained by a private contractor, and are considered to be in good to excellent condition. However, solid-state motor starters are recommended for the Capitol Annex main bank of elevators for their improved performance and efficiency. The cord-type phones in these elevators should also be replaced with hands-free models per current codes. All elevators should also have location I.D. features installed per code. Wheelchair and Stair Lifts. Two of the four wheelchair lifts appear to have reached their expected useful life and are no longer code compliant; their replacement is recommended. The remaining two vertical wheelchair lifts and two inclined stair lifts are in good condition, though require replacement of their cord-type telephones with hands-free models per current codes.

Modernization Program. A regular upgrade and replacement schedule has been recommended for all elevators. Upgrades include controls, floor selectors, drives, door operators, signal fixtures, and cab interiors. Upgrades are recommended approximately every 25 years.

1.3.5 MECHANICAL AND PLUMBING SYSTEMS

The Capitol Building is heated and cooled by steam and chilled water delivered via utility tunnel from the Central Plant. Arrays of air-handling units with heat-exchanger coils use these fluids to inject or extract heat from air blown through the coils. The tempered air is then delivered throughout the building with dampers and mixing boxes controlling room temperatures as directed by thermostats. Most components of the climate control system in the Capitol Annex are over 50 years old.

Most plumbing fixtures in the Capitol Annex are also original, and have inefficient or unreliable flush valves. Most plumbing fixtures throughout the building were installed prior to current barrier-free requirements, some of which require replacement or modification to comply. The Capitol and Capitol Annex basement have fire sprinklers. There are no fire sprinklers in the First through Sixth floors of the Capitol Annex.

Maintenance procedures of the Capitol's mechanical systems require improvement. Leaks in water and air piping, as well as duct work are widespread. Some cooling coil sets are corroded and require cleaning and recoating. Several condensate collection systems leak and/or hold water, promoting unhealthy air quality conditions. Generally, systems efficiency and reliability require improvement through component cleaning, repairs, replacements, documentation, and adjustments.

1.3.6 ELECTRICAL SYSTEMS

Electrical power is delivered to the Capitol through an array of SMUD transformers in a vault next to the loading dock at the Capitol Annex. Power is brought into the building through a pair of busways that lead to switchgear, and then throughout the building. The Capitol Annex and Capitol also each have emergency power generators. The service entrance switchgear is in good condition, but much of the distribution switchgear in the Capitol Annex is over 40 years old and should be replaced to facilitate maintenance.

Some code violations may be found throughout the system, ranging from inadequate working clearance around panel boards and other components, to exposed energized parts. Some violations stem from mismatched replacement parts due to the age of some components.

The most widespread problem with the electrical systems is inadequate circuits made available to office spaces. The results are interference between incompatible equipment powered by the same circuit (computers with refrigerators, for example), and occasional local power failures due to overloaded circuits. Some overloading can be reduced as climate control issues are resolved, thus greatly reducing the need for personal space heaters, for one. Centralizing some personal equipment such as microwaves and refrigerators will also aid in-power system reliability and efficiency.

An electrical equipment replacement schedule has been proposed to improve the safety, capacity, and reliability of the power systems. Non-code-compliant components must be replaced immediately. Older components such as switchgear and transformers are next, culminating eventually with the replacement of the entire distribution system.

1.3.7 TELECOMMUNICATIONS SYSTEMS

Voice and data lines connect to the Capitol through both copper and fiber optic cables. Data and voice distribution systems are physically separated from each other, and are further separated between the Assembly, Senate, and Governor's systems. Telecommunications cabling is distributed throughout the building to intermediate distribution facilities (IDFs), and then branch further to individual suites and offices. Voice IDFs are located in original closets designed for this purpose, while most data IDFs are in newer, and sometimes improvised spaces.

The physical condition of these systems provides clear evidence of the frequent changes in information technology. Though the systems are generally well organized, they exist among many layers of abandoned cabling and conduit from earlier systems, all of which have little or no documentation. The physical crowding of cables and components, along with the lack of documentation of the systems greatly hinders the effectiveness of future system upgrades and expansion. Though some consolidation may be possible with the use of internet-based voice communications (VoIP), the physical limitations prevent a highly efficient VoIP system from being implemented, as well as greatly limiting wireless telecommunications abilities within the building.

Thorough investigation and documentation of the current communications systems is a vital first step to preparing the Capitol for the beneficial communication technologies becoming available. Removal of abandoned facilities, closing abandoned conduit penetrations, and consistent labeling of what remains must come next, followed by improving the enclosure and access conditions for the equipment, such as better lighting, temperature, and dust control.

1.3.8 MAINTENANCE PROGRAM

The size, age, complexity, intensity and daily duration of use, and symbolic status of the California State Capitol all make this building an especially difficult and important building to maintain properly. The erratic and at times 24-hour business activity alone makes the building unique among state properties. Yet this building is also a historic public museum hosting over a million visitors each year, accelerating wear and tear on its many valuable finishes and features. These unique circumstances combined with the periodic need to divert limited maintenance staff and resources to special events at the facility have resulted in reduced quality of routine maintenance, and the neglect of several less visible, less critical functional systems that have been documented throughout this report. The deteriorating conditions throughout the building are becoming obvious, thus reducing the productivity and morale of both building users and the staff that maintains it.

The principal solutions offered for these currently unsatisfactory conditions are four-fold:

1. Increase cleaning staff based on actual need, not per square foot. Because this building's usage is exceptionally intense, cleaning events must occur more than once per day.

2. Employ a task-oriented team approach, a more efficient way to manage cleaning events, instead of one person doing many tasks in a location-oriented approach.

Fully utilize Maximo, the state's computer work tracking system for all building assets, and allow both building uses and cleaning staff to initiate maintenance and repair requests through it.

Enforce renovation Guidelines for office holders to maintain the building's long-term architectural, functional, and life safety integrity.

1.3.9 SUSTAINABILITY OPPORTUNITIES

California has stated a goal to achieve a LEED (Leadership in Energy and Environmental Design) Silver Rating for all its new buildings. Based on the Capitol's current conditions and improvement goals, it is realistic for the Capitol to achieve a Silver Rating through the LEED-EB Rating System—the LEED scale for Existing Buildings.

By implementing the physical and operational improvements recommended in this report, it is most likely that the Capitol could attain a LEED-EB "Certified" Rating by earning a projected 35 of 85 possible points.

However, this section has identified some realistic measures that can earn the Capitol an additional seven points, upgrading the rating to LEED-EB Silver.

1.3.10 BUILDING DOCUMENTATION

A collection of drawings, specifications, samples, and reports describing the Capitol over more than a century has been developed, and is being stored in a variety of locations around the Sacramento area and in a number of formats. The dispersed locations, format inconsistencies, and number of government and private entities responsible for these documents have prevented the development of a central, up-to-date database to describe the building's current conditions. The result is when work is performed on the building, it often conflicts with unexpected existing conditions, is sometimes redundant or ineffective, and/or does functional or aesthetic harm to the building.

A central computer database consisting of coordinated drawings, text documents, images, and spreadsheets can be developed from the existing documentation collection, but can be edited, updated, and controlled with much greater ease, efficiency, accuracy, and security than the current resources. This ever-changing database must function as a dynamic model of the current building conditions for every discipline. It should be maintained by a small, dedicated, and highly trained staff, yet selected portions of the database must be available to a potentially vast and diverse audience on short notice."

DESIGN GOALS

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DESIGN GOALS

Great buildings don't just happen. Great buildings must endure through the concept of good and have the backing of strong people pushing them forward to Great.—Anonymous

During our initial planning meetings with Capitol personnel, we defined and explored various design goals for the Capitol Annex project. The following pages share these goals and how they apply to the proposed modifications. These goals represent the most important ideas of the project, and must be kept at the forefront of the design process as the project moves forward. They will be used throughout the entire process to guide decisions made by the Capitol Annex team. The goals include a number of non-negotiable items which are statements of facts that must be accomplished or maintained to achieve a successful project. These design goals should not be compromised unless there is agreement from the entire team. The imagery is aspirational and reflects the concept/idea that is being conveyed, or is shown to represent areas that need improvement. Imagery from both the California State Capitol and other facilities was used.

The following is a list of project Design Goals:

- Transparency and Openness
- Civic Engagement
- Dignity
- Entry and the Visitor Experience
- Functionality
- Hierarchy
- Historic Connection and Relevancy
- Natural Light and Views
- Life Safety
- Accessibility
- Sustainable Design
- Safety of Users
- Mechanical Systems
- Electrical Systems
- Technology
- Adjacencies
- Presence in the Building
- Meeting Spaces
- Displays
- Capitol Park and Views to the Capitol

Transparency and Openness

Modifications to the Capitol Annex should uphold the Government's commitment to maintain transparency and openness with its citizens. The Capitol Annex design must support the Government's mission to share information with its citizens and allow them to continue to hold members accountable for conducting the people of California's business.

The public is encouraged to participate in the governmental process in a variety of ways. Most commonly, the public attends hearings in rooms such as 4203 shown here. These rooms offer the public the opportunity to listen to the issues and voice their opinions. At present, these rooms are often at capacity, forcing people to wait in the adjacent hallways. Additionally, those who do not reside in Sacramento, can find it difficult to travel to the Capitol building.

Opportunities for public participation will drive many of the design decisions for the Capitol Annex. Not only should hearing rooms be added and expanded in capacity, remote teleconferencing should also be explored. Access to members, organized on-line public information, adequate hearing rooms, and clear wayfinding are important considerations to maintain transparency and openness.

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DESIGN GOALS
01

DESIGN GOALS
02

Civic Engagement

The Capitol Annex stands as a beacon of the "Government by the People" and must promote Civic Engagement. Elected officials must be able to work with their constituents to enhance civic life in their communities. The public needs comfortable, inviting, neutral, and safe facilities in which to express their opinions. Space to learn and collaborate is also vital.

Well-planned modifications to the Capitol Annex will foster civic engagement by promoting social interaction. Currently, the Capitol Annex promotes civic engagement within its hearing rooms, as shown in this image, but offers few other opportunities for social interaction and collaboration. Hallways, which are often used for impromptu meetings, are typically noisy and crowded.

In addition to enhancing and adding hearing rooms, other deliberative spaces to facilitate collaboration should be considered. These may include informal break-out spaces adjacent to the main circulation pathways, large community areas, dining rooms, designated picnic areas in the park, and private meeting rooms. Enhanced circulation and wayfinding, combined with state of the art technology, support public access. It is important that design aimed at civic engagement offers day-to-day flexibility and is adaptable to changing needs in government.

Dignity

The State of California's business shall be conducted in a facility where elected officials, government staff, and the public are proud to come to work and visit each day. Architecture can help foster dignity by contributing to peace, conflict resolution, and promoting a fair and just legislative system.

Changes in technology and government operations, as well as security concerns, have diminished the beauty and significance of the approach, entrance, and navigation through the Capitol Annex. In 2002, one of the two security entrance portals shown in the photo was added to the Capitol Annex to screen individuals entering the Capitol Building. These structures were hastily installed and do not compliment the architecture of the Capitol Building. They also diminish the approach and entry experience into the building.

DESIGN GOALS
03

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DESIGN GOALS
03

Dignity

The goal of a dignified space is to provide a quality experience for the user. This image is a good example of dignified Architecture. The dais desk is prominent in the space providing the opportunity for the civic process to shine without distracting from the cohesiveness of the space. The public also has the opportunity to connect with their legislature, providing them with a sense of identity and pride.

Modifications to the Capitol Annex may not have the same aesthetic style as the adjacent image, but should strive to incorporate the same principles that define a dignified space – respect, connectivity, sense of place, and self-worth.

Entry and the Visitor Experience

The primary entrance or lobby space to the Capitol Annex or Historic Capitol will define the visitor's first impression of the building. More than 1.5 million people visit the California State Capitol Building each year. Modifications to the Capitol Annex should work to enhance the visitor's experience through creativity in entry and building access, information distribution, wayfinding, illumination, digital enhancement, comfort, and engaging displays. Modifications should also include a public entrance that provides easy access to a newly designed and incorporated visitor center.

Applying a balance of aesthetics, security, and operational considerations, entry spaces are meant to welcome and direct both business occupants and visitors. As visitors leave the primary entrance space to navigate through the building, the general principles of the lobby space should be carried throughout the entire building to provide the optimum visitor experience.

According to the Whole Building Design Guide, the following design goals are specifically aimed at enhancing the visitor experience:

Aesthetics:

- Utilize appropriate finishes, furniture, signage, and art to reflect the public nature of the space.
- A spatial compression/release experience can enhance the aesthetic experience (refers to the experience of entering through a tight space into a large vibrant volume).
- Well-designed lobbies and other public spaces provide workers and visitors with a relief opportunity from more confined spaces.

Functional/Operational:

- Combining employee and visitor entrances into a single entrance makes them more functional.
- Design spaces to accommodate peak loads.
- Specify durable finishes for maximum pedestrian traffic.

Sustainable:

- Utilize daylighting to provide natural light and reduce electric lighting needs.
- Provide comfortable air temperatures.
- Provide adequate trash and recycling centers.

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DESIGN GOALS
04

DESIGN GOALS
04

Entry and the Visitor Experience

This photograph demonstrates a welcoming visitor gathering space that supports a positive visitor experience. The finishes are pleasing, inviting and durable. The lighting is bright and affords a sense of security. The displays are interesting and engaging, and the exit signage clear. Most importantly, the space is very roomy and can accommodate large crowds. Even though this space is actually underground, there is a distant vista with natural light. Modifications to the Capitol Annex should strive to incorporate such spaces to enhance the visitor experience.

Functionality

Modifications to the Capitol Annex should satisfy the emotional, cognitive and cultural needs of the Legislature, their staff, and their constituents. A functional design will enable occupants and visitors to efficiently and comfortably carry out their activities. This includes a spatial arrangement that is organized, secure, culturally sensitive, and easy to maintain.

The most important function of the Capitol Annex is to provide space for the California Government to conduct its daily business in an efficient and secure manner. As the “People’s House,” the California State Capitol supports a variety of purposes, but all modifications to the Capitol Annex should support an orderly democracy. Early programming and design decisions have significant impact on the functional quality of buildings. Through the design process it will be imperative that the design team gain a clear understanding of the function and physical requirements of the occupants.

In its current configuration, the Capitol Annex cannot house all of the desired functions. This leads to inefficient modifications and unnecessary time spent traveling between buildings. The public enter directly into the business area of the Capitol Annex, causing congestion, confusion, and often frustration. Ideally, the overall design of the building will combine the executive branch, all legislative members, committees, and support staff in the Historic Capitol and Capitol Annex. Members of the public wishing to tour the historic building should enter through a separate entrance.

Functional principles should be carried throughout every space in the building. The auditorium in the adjacent image was designed appropriately for its function. Although this image is not from the Capitol Annex, it shows tiered seating for good sight lines. There is also accessible access, appropriate technology for both users and guests, and the furnishings are durable and comfortable.

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DESIGN GOALS
05

DESIGN GOALS
06

Hierarchy

Modifications to the Capitol Annex should respect the hierarchy of occupant use and the historic relevance of the Historic Capitol. Hierarchy, one of the ordering principles of architecture, assigns importance to buildings, spaces and elements through shape, size and placement. An orderly approach to design will help to give importance to prominent spaces. For example, any changes to the Capitol Annex must not encroach upon the height of the dome on the Historic Capitol.

Modifications to the Capitol Annex should follow the hierarchy established by the Historic Capitol created through volume of space, level of finish, and placement of rooms and other spaces. The hierarchy of space in the Historic Capitol is very clear. The spaces typically accessed by the public were designed to be the most beautiful. Based on this, it is clear that the most important spaces in the Historic Capitol are the Rotunda, hallways, Chambers, and leadership offices. Before it was demolished, the Library on the east side of the Historic Capitol was also very grand.

In its current state, the Capitol Annex does not follow these principles of hierarchy. There are essentially no public gathering spaces in the Capitol Annex, and the hallways are featureless, narrow, and uninteresting. Most of the existing hearing rooms in the Capitol Annex do have a slightly higher level of finish than other spaces, but are not grand volumes like in the Historic Capitol. They are somewhat functional, but do not promote pride and dignity. Some hearing rooms are dedicated to certain historical figures which should be carried through into the future design of the Capitol Annex. The stately hearing room shown in the adjacent photo honors Rose Ann Vuich who was California's first female Senator, elected in 1976.

Hierarchy

As a secondary building, the Capitol Annex should not compete with the importance of the Historic Capitol, but should convey a certain complementary level of stature. This image is of the Senate Chamber in the Historic Capitol and displays the highest level of importance. In this room, the public is invited to watch their government in action. The public seating looks down on the Senate Chamber amidst grand finishes and chandeliers.

The current starkness between the two buildings can be improved with a little thought taken to the level of finish and volume, as well as improving the alignment of each of the floor levels. Hallways, gathering spaces, public hearing rooms, member offices, and other public spaces should be given the most attention regarding finish and detail. Materials and colors complementary to the Historic Capitol should also be considered.

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Historic Connection and Relevancy

Modifications to the Capitol Annex must respect and appropriately connect to the history of the Historic Capitol. Whenever possible, physical connections to the Historic Capitol should align with the existing floor elevations and use complementary finishes.

This image demonstrates the level of detail to be found throughout the Historic Capitol. This level is not appropriate for the Capitol Annex, but some measure of detailing and compatible materials should be incorporated to connect the two buildings. Detailing in the Historic Capitol depicts many symbols of California that can be introduced into the Capitol Annex. They include: California's Great Seal, the California Grizzly Bear, Eureka motto, the California Golden Poppy, and the fasces symbol (bundle of sticks) seen on the door trim.

Currently, the aesthetic connection between the Historic Capitol and Capitol Annex is very poor. There is no cohesiveness in design or level of finish and the floor levels are misaligned. The realignment of the floor levels should be studied to make a seamless transition and offer interesting vistas down the corridors.

Natural Light and Views

Access to natural light and views of the surrounding park and buildings will be key considerations in future design modifications to the Capitol Annex. Natural light and views play an important role in organizing office, meeting and support spaces within the Capitol Annex.

According to the Whole Building Design Guide: “Providing a direct link to the dynamic and perpetually evolving patterns of outdoor illumination, daylighting helps create a visually stimulating and productive environment for building occupants, while reducing as much as one-third of total building energy costs.”

Well-designed daylighting, or use of natural light, can significantly impact electrical costs and decrease a building’s environmental footprint. California codes and U.S. Energy Information Administration discuss the following ways to lower energy costs.

- Daylight Harvesting: Daylight harvesting is a system or strategy that maximizes the use of sunlight to illuminate the building interior to offset electrical lighting needs. Its main purpose is to conserve energy. It may include an interior lighting control and shade system that automatically dims light fixtures when natural light is available, and/or adjusts shades so that the combination of natural light and artificial light combine to provide the desired level of lighting.
- Daylighting Sensors: Daylight sensors are devices that read the amount of available light and send signals to a control system. They take advantage of sunlight to cut the amount of electric lighting used in a building by varying output of the lighting system in response to variations in available daylight.

Most of the occupants we surveyed indicated that natural light was important to them. Natural light and views of the outdoors support occupants’ well-being and are important design goals.

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Life Safety

Building codes mandate minimum levels of safety pertaining to the building specifically. Some of the issues mandated for buildings are height and area limitations based on type of construction, fire resistance and protection requirements, requirements for evacuation, specific requirements to allow use and access to a building for persons with disabilities, and building systems, such as lighting, HVAC, plumbing fixtures, and elevators. The future Capitol Annex should fully comply with all applicable national, state and local codes.

Safe, orderly occupant exiting, and ease of access of emergency personnel requires exit structures such as hallways, stairs, and elevators designed to facilitate safe access of EMS/fire department personnel into the building, as well as exiting. Appropriately designed exiting systems provide separation of exits so users have options. We recommend that corridors are amply wide, clear of office equipment, and not crowded, allowing for code compliant exiting.

Elevators should be designed large enough for gurneys, provide appropriate waiting space at landings to afford a clear corridor to pass, and separate freight from passengers. Elevators should also be placed near stair paths to support accessibility.

Well-designed lighting, mechanical and plumbing systems also support life safety. Issues to consider include emergency lighting and standby power, protected (fire/smoke) exit enclosures, and if an atrium is implemented, a smoke control system. [An atrium would allow for a large internal daylight area which could be used to align floors from the Capitol Annex to the Historic Capitol.]

All life safety elements should be designed with a diverse user base in mind, including public tours, business visitors and children on educational visits.

Life Safety—Automatic Fire Sprinkler Systems

Fire suppression systems (automatic fire sprinkler systems) are a code requirement for larger buildings constructed under today's building codes. The photo on this page illustrates a significant safety design goal for the Capitol Annex. It is significantly easier and more cost efficient to install a system during initial construction vs. retrofit.

The National Fire Protection Association (NFPA) notes the following:

- *Saves Lives: The civilian fire death rate of 0.8 per 1,000 reported fires was 87% lower in properties with sprinklers than in properties with no automatic fire sprinkler system.*
- *Lowers Injuries: The civilian injury rate of 23 per 1,000 reported fires was 27% lower in properties with sprinklers than in properties with no automatic fire sprinkler system.*
- *Saves Firefighters: The average firefighter fire ground injury rate of 20 per 1,000 reported fires was 67% lower where sprinklers were present than in fires with no automatic fire sprinkler system.*
- *Damage is limited: Automatic fire sprinkler system reduces damage by limiting the fire intensity and the migration/spread of the fire to adjacent locations.*

Automatic fire sprinkler systems help maintain exit systems, and should be placed per code throughout the entire Capitol Annex.

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Accessibility—General

Accessibility enables all citizens to participate in their government. Buildings built prior to 1991 were not constructed to meet the rules of the Americans with Disability Act (ADA). California's Building Standards Code (Physical Access regulations) are found in Title 24 of the California Code of Regulations (CCR), and are designed to comply with the requirements of the Americans with Disabilities Act (ADA) and state statutes.

California rules related to accessibility state (partially noted):

- *CHAPTER 7. Access to Public Buildings by Physically Handicapped Persons [4450 – 4461] (Chapter 7 added by Stats. 1968, Ch. 261.) 4450. (a) It is the purpose of this chapter to ensure that all buildings, structures, sidewalks, curbs, and related facilities, constructed in this state by the use of state, county, or municipal funds, or the funds of any political subdivision of the state shall be accessible to and usable by persons with disabilities.*

This design goal is intended to create a building that enables and encourages people with physical disabilities to visit the Capitol and to participate in state government in the same manner that all others participate. The existing ageing building has had various devices added to overcome physical barriers. It is far better to design a building from the beginning to integrate accessibility into the aesthetic fabric of the building and ensure the comfort and dignity of all visitors. Paths, doors, elevators, toilet rooms, and public meeting spaces should be designed concurrently with other amenities of the building.

Accessibility—Stairs, Ramps, Elevators, and Lifts

The stated goal of being fully accessible requires an astute understanding of accessibility codes and current options regarding stairs, ramps, elevators and lifts. Long ramps veering off the main path, post-applied lifts, and steps in the common route, place additional burdens on persons requiring accessibility assistance. Long glaring floor paths are a detriment to sight impaired individuals. The ability to perceive light changes with age. Shiny floors cause greater concern to the visually impaired since they often cannot see the floor edge or discern the texture and slope of a floor surface.

A combination of code compliant stairs, ramps, and elevators should be designed and specified for the Capitol Annex to offer accessible routes to, from and through the building, and from floor to floor. Platform lifts, such as the one in the image currently located on the 6th floor of the Capitol Annex, can also be used to transport people short, vertical distances. However, due to vertical clearance and maintenance requirements, lifts can often be tricky to install and maintain. Lifts should also be simple to operate for the user.

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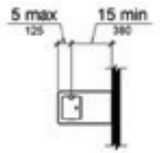

Figure 602.5
Drinking Fountain Spout Location

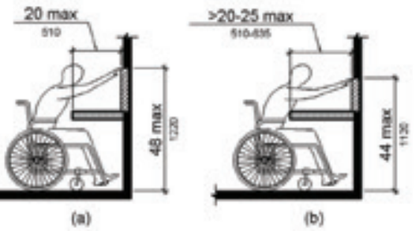

Figure 308.2.2
Obstructed High Forward Reach

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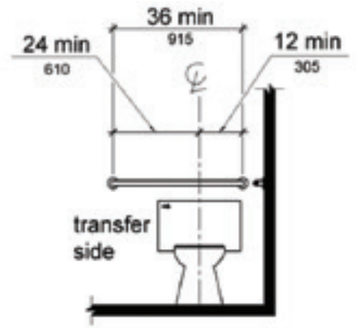

Figure 604.5.2
Rear Wall Grab Bar at Water Closets

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Accessibility—Drinking Fountains, Restrooms, and Door Hardware

Older buildings are often challenged in complying with current accessibility codes. Outdated plumbing fixtures typically don't comply with California's Title 24 code requirements, and tight spaces cause difficulties with maneuvering.

Per the 2010 ADA and Title 24, toilet rooms and drinking fountains shall be accessible. Currently, the toilet rooms are outdated and have a number of accessibility deficiencies including access, fixture placement, fixture heights, reach ranges, and maneuvering clearances. Photo #1 is of a current drinking fountain within the Capitol Annex. Based on a variety of criteria, this fountain is not accessible. Additionally the building occupants want to reduce the amount of bottled water used by installing water bottle fillers. Images #3 and #5 are compilations of diagrams taken directly from the 2010 ADA demonstrating accessible reach ranges and some plumbing fixture requirements.

Image #4 is of a modern restroom within a historic building not within the Capitol complex. This restroom is fully ADA compliant, yet retains the historic nature of the building.

Door hardware is an integral component of the entry experience, but is often overlooked when designing public facilities. There are a number of requirements for accessibility compliant door hardware. Modifications to the Capitol Annex should include accessible door hardware, and access to spaces. Image #2 shows a knob on an existing door in the Capitol Annex which is not accessible. Per the 2010 ADA and Title 24: "Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting or the wrist."

Sustainable Design

The new Capitol Annex should strive to be an icon of sustainable design and amongst the most energy efficient Capitol buildings in the nation. Good sustainable design delivers a building that is energy efficient, is built of sustainable materials, limits greenhouse gas emissions, and provides a healthy environment for building occupants.

An energy efficient building requires a well-designed and constructed exterior envelope, an intelligent and well-designed mechanical system, and a lighting system that incorporates daylighting and reacts to the quality and amount of available exterior light.

'Sustainable materials' refers to building components that are manufactured with natural and renewable materials in place of harmful or high-energy products. Criteria may include:

- Materials produced without use of toxic chemicals
- Durable materials for long life cycle
- Easily cleaned and maintained materials
- California or regionally based, when feasible, to reduce transportation costs
- Low water use fixtures

The State of California is a leader in reducing the global warming potential for buildings. Material selection should be towards carbon neutral products and systems. An environmental controls system should be comprehensively designed and integrated into building systems to limit energy use and maximize comfort. Options for on-site power generation, such as photovoltaic rooftop panels, should be considered.

Lastly, there are many opportunities to improve the health and well-being of the building occupants: avoiding materials that off-gas toxic chemicals; enabling local control of lighting and mechanical systems; making daylighting a design feature throughout the building; and minimizing the opportunity for stressful interactions. A design that emphasizes a healthy workplace will lead to a more productive, vibrant environment.

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Safety of Users

The building design process needs to begin with safety of users in mind. Considerations for the pedestrian approach to the building, locations and sizes of screening areas, vertical and horizontal circulation, and the integration of technology all play a role in the design of the structure.

It is important to discuss vehicle approaches early in the design process. Capitol Park is a true gem and Californians should be proud of the history and monuments that constitute the grounds. Deliberate studies will be needed to minimize site impacts due to vehicles. If parking remains in close proximity to the Capitol Annex, then, at a minimum, vehicle security screening should occur outside of the secure perimeter of the building. An option to help alleviate security concerns associated with parking would be to locate it off site and provide concierge services for Members to have access to their vehicles. The loading dock should be moved further away from the Capitol Annex and include a location for vehicle screening.

Internally, wider corridors and stairways will support safer circulation. Member and staff only spaces should be developed for more security and for shelter in place options if needed.

The new Capitol Annex must incorporate a new security system with appropriate attention to new cameras and monitoring locations. At the same time, it must not detract from the aesthetic appearance of the building. The design team would be expected to closely coordinate security system design with the California Highway Patrol, Senate Sergeant-at-arms and Assembly Sergeant-at-arms.

Mechanical Systems

Energy efficiency for state buildings is not only good for buildings and the environment, it is also sets an aspirational goal for all. Significant energy costs are a drain on state resources. The state goals include high levels of energy efficiency for their buildings.

Occupant and visitor comfort is one of the most important design considerations. Modifications to the Capitol Annex must incorporate new mechanical and ventilation systems throughout the building. Consideration must be given to connections with the existing mechanical system in the Historic Capitol.

State departments across California are adopting a green way of thinking about their facility operations. Under the leadership of Governor Edmund G. Brown Jr., California has undertaken an ambitious effort to green the state's buildings and save taxpayer dollars in the process (see www.green.ca.gov/buildings).

Governor Edmund G. Brown Jr.'s Executive Order (Executive Order B-18-12) calls for new or renovated state buildings larger than 10,000 square feet to achieve the U.S. Green Building Council's LEED "Silver" certification or higher and to incorporate clean, on-site power generation, such as solar photovoltaic, solar thermal and wind power generation, and clean back-up power supplies. The order also sets a target of zero net energy consumption for 50% of the square footage of existing state-owned buildings by 2025, and zero net energy consumption from all new or renovated state buildings beginning design after 2025. The Executive Order directs state agencies and departments to reduce greenhouse gas emissions, overall water use, and grid-based energy purchases.

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Electrical Systems

Modifications to the Capitol Annex must incorporate appropriate modern electrical systems and infrastructure for today's buildings. Consideration must be given to connections with the existing electrical system in the Historic Capitol.

Governor Edmund G. Brown Jr.'s Executive Order (Executive Order B-18-12) states: IT IS FURTHER ORDERED that any proposed new or major renovation of State buildings larger than 10,000 square feet use clean, on-site power generation, such as solar photovoltaic, solar thermal and wind power generation, and clean back-up power supplies, if economically feasible.

Planning and design should consider the use of photovoltaic power generation integration into the roof design.

LED lighting systems can assist in lowering the cost of lighting. According to Energy.gov: *Widespread use of LED lighting has the greatest potential impact on energy savings in the United States. By 2027, widespread use of LEDs could save about 348 TWh (compared to no LED use) of electricity: This is the equivalent annual electrical output of 44 large electric power plants (1000 megawatts each), and a total savings of more than $30 billion at today's electricity prices.*

Daylighting and access to windows is a significant design goal that will affect the design of the electrical system. California codes and U.S. Energy Information Administration discuss a variety of ways to use natural daylighting lower energy costs.

Technology

Technologies that offer significant advantages should be provided in a flexible building environment which encourages timely inclusion. Technology has been embraced by the California Government but in many ways this technology is limited by the quickly changing landscape of technology compared to the initial install date.

Major technology changes have been implemented across businesses and governments. There is a desire for government buildings to have a 50-year life from the day of initial construction. This idea is excessively limiting on technology. Electronic video displays have quickly over taken other methods of signage and public information postings in public locations. Many buildings handle 2017 electronics on infrastructures substantially installed 30 to 50 years ago. Significant advances have also modified how businesses store information, promulgate news, and publish information for public consumption. Electronic printing in various forms such as PDF files are now commonplace in the business world but have hurdles to clear in government, as many of the rules that require paper copies were created many years ago. Twenty-five years in the future, these issues will mostly be resolved and electronic printing will inevitably have eliminated significant physical storage needs.

Design goal for technology: make the technology ubiquitous, flexible, changeable, and current. Design goal for the building: provide a flexible technology infrastructure which facilitates change over time. Provide public access technologies including assistive listening, electronic displays for directories, hearing schedules, televising, and remote location hearing capacity and participation systems.

Wireless and display systems in both public and private areas support accessibility, public engagement, information propagation, and enhance building operations.

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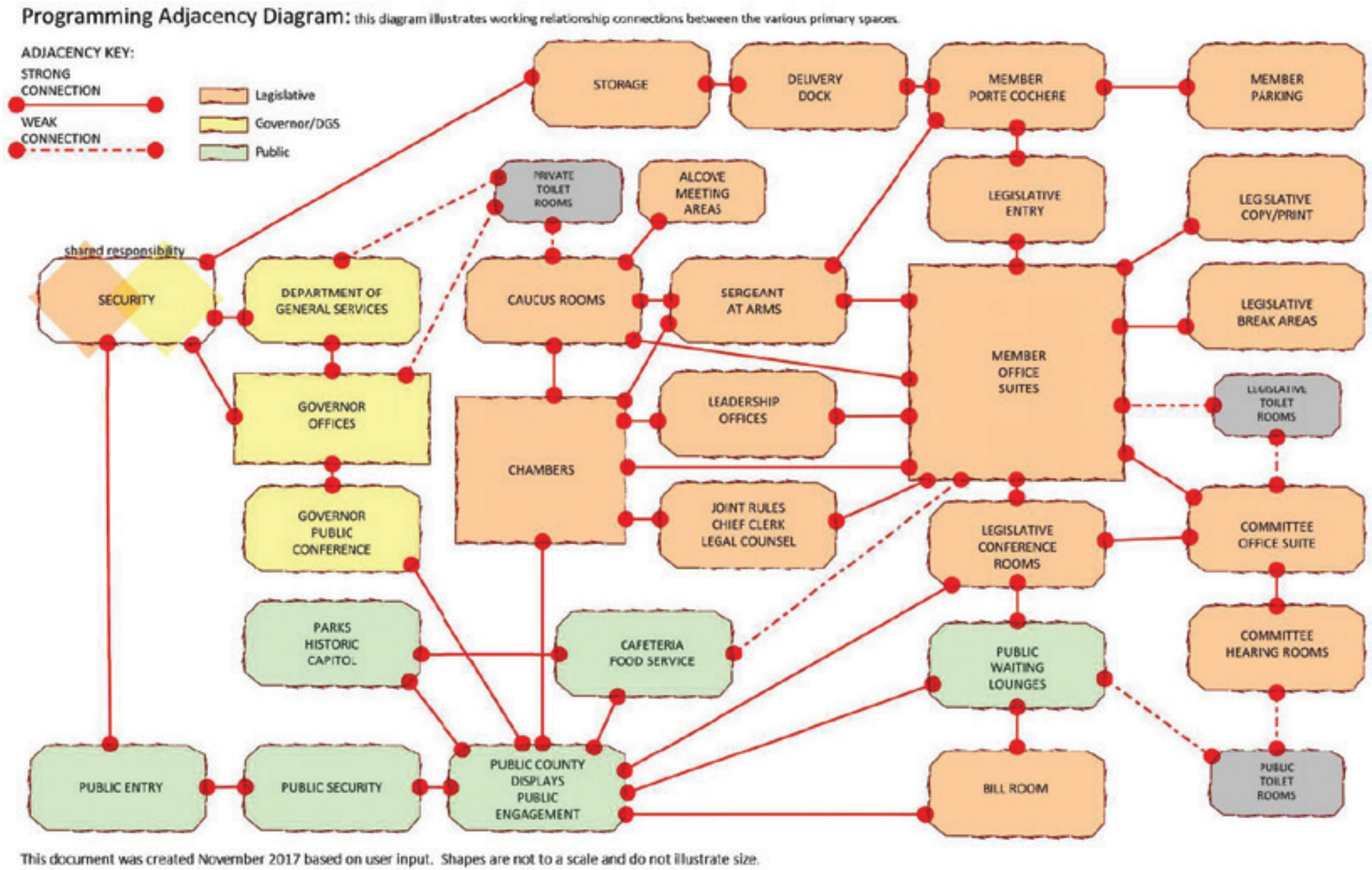

This document was created November 2017 based on user input. Shapes are not to a scale and do not illustrate size.

Proposed Adjacencies

In planning and design it is important to consider the needs and working relationships of all internal departments and functions. Adjacency is defined as something that is next to or adjoining something else. This image demonstrates an adjacency plan for the California Government within the Capitol Annex. It shows how departments can be placed depending on their communication and interaction needs. Careful consideration must be given to the needs and working relationships of Capitol Annex occupants to maximize efficiency. Adjacency planning includes an analysis of each department's specific needs, interactions, security concerns, and public access tendencies.

Providing appropriate adjacency connections and eliminating undesired connections requires a robust planning discussion. The diagram shows a high-level view of the adjacencies that were discussed during the planning process. This exercise allows a group or an individual to analyze their circulation paths in alignment with their job duties while maintaining an open, engaging government process.

The design goal is to have a clear path for the public and their lawmakers to engage, and to facilitate lawmakers in meeting their legislative job requirements. Adjacencies stand at the forefront of architectural planning tasks and are essential for describing relationships between building occupants and visitors.

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Presence in the Building

As the project moves forward, consideration should be given to the placement of all departments either currently within the Capitol Annex, or in adjacent buildings, to determine the building layout that will best foster government efficiency. The Capitol Annex was originally constructed to consolidate governmental functions into one building and to allow for expansion over time. Having multiple personnel and uses in one building enhances efficiencies and enables the public to more easily engage with their elected leaders and staff. The 21st Century demands an efficient government, and a single building with the proper adjacencies greatly increases these efficiencies.

During the programming interviews, the design team asked who should remain in the Capitol Annex and if there were any groups currently not located in the Capitol Annex that should be. The response was in favor of bringing all committees back into the Capitol Annex, if possible. This would enable faster communication between committee leadership and staff, and allow for better engagement with the public. Per statute, some departments such as the Office of the Governor must remain in the building.

It is important for many groups to be located near the Chambers, particularly during session, but the layout also needs to allow the public to directly engage with their State Government and feel welcomed.

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Meeting Spaces

Modifications to the Capitol Annex must include the number and size of meeting spaces required for the Government to function properly. Informal conferencing spaces are needed for quickly scheduled meetings. These can be located in private areas or in areas that are shared by multiple groups or the public.

Capitol Annex occupants uniformly expressed the need to gather people in adequate rooms rather than in open office areas or the corridor. Some meeting rooms and other seating spaces should be provided for use by the public. These rooms could display video of hearings, chamber activities, floor votes, and other government broadcast information.

Formal gathering spaces are also required. Too few and too small hearing rooms are inadequate for discussions that receive a great deal of public interest. This leads to overcrowding in hearing rooms and adjacent corridors, and can limit the public's ability to participate in the legislative process. Overcrowding is a security concern, and having larger hearing rooms adjacent to wider corridors would be beneficial for the Sergeants-at-Arms. A well-planned circulation layout would also provide separate entry points for the public and Members.

Proper technology in meeting spaces includes audio/visual systems, infrastructure to enhance the ability to film public hearings, and assistive listening systems for the hearing impaired. Design should include special acoustical design, and provide a level of flexibility to adapt to different user's needs.

Displays

Display exhibits are an important feature to promote learning about the state and its government and to connect with lawmakers. Currently, displays are concentrated on the First Floor of the Capitol Annex and include the California county exhibits and the bear sculpture in front of the Governor's office. These displays are very popular but are located in high-traffic corridors that are not wide enough to handle both the business and tourist traffic.

The design goal for existing displays is to protect and retain them and to re-install them in the Capitol with ample room for viewing without impeding business traffic. Most tourist traffic to the Capitol building is focused in the Historic Capitol. This may be where the county displays should be located.

There have been discussions to create a new entry at the Historic Capitol to accommodate most of the tourist traffic. This new entry could bring persons into a new visitors' center in the basement. New or existing interpretive displays could be integrated within the secure entry area, so that persons who are waiting to be screened immediately begin to experience the Capitol's story.

Current trends in exhibit design include interactive exhibits that promote learning. The California Capitol conducts hosted tours. Additional displays that promote self-interpretation would allow visitors to experience the building at their own pace and interest level. All exhibits and interpretive themes should reflect the dignity of the environment where they are located.

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Capitol Park and Views to Capitol

Many of the interviewees we spoke to indicated they place a high priority on maintaining views to the Historic Capitol and impacting Capitol Park as little as possible.

The Capitol Park contains numerous trees from around the world, as well as five significant memorials:

- Civil War Memorial Grove
- Camellia Grove and International World Peace Rose Gardens
- The California Vietnam Veterans Memorial
- The California Veterans Memorial
- The California Firefighters Memorial

The park serves as an important gathering place and event venue. Great care must be taken during the Capitol Annex project to minimize the impact on the historic capitol grounds. Strategic design can help to minimize impact on important trees located directly adjacent to the building.

Views to the north, south, and west facades of the Historic Capitol must be maintained, as well as views to the dome from all sides. Any structures constructed or added to the east side of the Historic Capitol must be subservient to the Historic Capitol to maintain views to the dome.

PLANNING CONSIDERATIONS

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PLANNING CONSIDERATIONS

To meet the project design goals the following design concepts should be considered. The concepts and information noted in this section were gained by observation, document review, and personal interviews/discussions with current Capitol users.

Architecture starts when you carefully put two bricks together. There it begins. —Ludwig Mies van der Rohe

Swing Space

Swing spaces are off-site buildings and other spaces that will be needed during construction of the Capitol Annex. It is better for everyone to move out of the Capitol Annex during construction rather than try to retain partial occupancy during construction. Some Capitol areas may be integrated temporarily into the swing spaces so the Government can continue to function as efficiently as possible. For example, while renovating other state Capitol buildings, some states have added temporary Chambers to their swing space to maximize governmental efficiencies during renovation.

Adjacent State-owned buildings could be considered for swing space; however, some of these structures suffer from the same issues present within the Capitol Annex. Another consideration is to construct new swing space. The LOB parking lot is owned outright by the Legislature, and a new multistory building could be constructed at this location to serve as swing space. A nine-story building has already been designed for this parking lot as a replacement for the LOB, and if this project (or a similar project) were to move forward and the timing was right, this could be an ideal way to obtain needed swing space. Coordinating with the California Capitol security teams will be extremely important as swing space concepts are vetted.

Safety of Users/Building Security

Security issues are of major concern in the current facility. Proper space allocation will alleviate some of the problems. Larger corridors allow security personnel to respond more quickly to threats or emergencies. Better screening areas at entry points must be well-designed and flexible for changing needs. Separate screening areas for employees and visitors should also be considered in long-term planning. Having a stronger Command Center would assist with not only the security of the Capitol Annex, but the Historic Capitol and Capitol Park grounds as well. The Command Center does not need to be in the Capitol Annex, but must be in close proximity.

Additional conference rooms for security team briefings and training are needed. Having a larger room in the Governor's suite for the CHP to view monitors is needed. Future staffing needs for each of the three Security divisions (Assembly, Senate, and CHP) have been reviewed and will be included in the programming analysis.

Regarding parking under the building, the security screening for vehicles should, at a minimum, occur outside of the footprint of the building, but ideally the parking should be removed from under the building entirely. Also, the loading dock should be further from the building or at a minimum allow for screening of vehicles prior to accessing the site. Security personnel should be consulted to develop a plan for arrival, departure, and securing official vehicle traffic and delivery traffic connected to routine capitol operations, including special event set-up and catering needs.

The new or renovated Capitol Annex should incorporate a new security system including new cameras and monitoring locations. It should also incorporate a new card reader/token access control system (rather than brass keys). The design team should evaluate the facility to determine if dedicated-access corridors and shelter-in-place spaces could be integrated into the floor plans.

Meetings with Senate Security, the California Highway Patrol, and Assembly Security took place on August 22, 2017. The Joint Committee on Rules also had a closed session on security on August 22, 2017. Refer to separately bound ***APPENDIX B*** for meeting minutes.

A physical security evaluation must be performed to review strategies for safeguarding the Capitol Annex inhabitants, staff, and visitors. A preliminary assessment of the Capitol Annex was conducted using the Department of Defense (DoD) Standard UFC 4-010-01 "Minimum Antiterrorism Standards for Buildings" and is published under separate cover. Refer to separately bound *APPENDIX C – Safety of User Preliminary Assessment: Physical Security of the Building*. Also available is the Federal Emergency Management Agency's (FEMA) manual 426, "Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings," which includes criteria applicable to the design of a renovated or new Capitol Annex.

Growth Factors

Growth factors are addressed in many of the reports. The population of California in 1869, when the Capitol was completed, was 560,000. The population in 1969 was estimated at 20,100,000 with no change in the number of legislators. Some sources indicate the current population of the state to exceed 39 million. This has put an obvious strain on the legislature as the number of staff required to accommodate this exponential population growth has greatly increased.

The historical data provided contains inconsistencies in assessment of overall square footage required for the Capitol Annex (and adjacent Historic Capitol). Early 1970's projections for the year 2000 varied from 572,806 to 702,270 square feet. The calculated areas required for the Capitol Annex are identified in the Tabular Documents section located towards the end of this report. The current size of the facility is approximately 364,509 gross square feet.

One Building Concept (Historic Capitol and Annex Combined)

Interview results support the Capitol Annex being closely connected to the Historic Capitol building. Only a few of the interviewed users thought it would be an acceptable to have the Capitol Annex building separated from the Historic Capitol building. Interviewed users conclusively voiced that they felt it would be detrimental to separate the Capitol Annex from the Historic Capitol building. Stated issues with having multiple legislative buildings housing Member Suites include:

1. Multiple legislative buildings would limit collaboration between the legislators of Assembly and Senate. It was noted that many interactions between Members are fortuitous because of opportunities created by being in the same circulation and having the ability to walk across or down the hall for quick meetings.

2. A single building concept enables elected officials and staff to readily transition throughout the Capitol Annex and Historic Capitol in an efficient manner.

3. Multiple legislative buildings would limit collaboration between the legislators and the public. Enabling members of the public to come to one building to engage multiple elected officials is desirable. From our onsite observations, many of the legislators embrace these engagements with their constituents while they move throughout the Historic Capitol and Capitol Annex. We also learned that for security and brevity of travel time it is desired to incorporate more private paths for legislators.

4. Pedestrian traffic between multiple legislative buildings makes security more difficult. Separate entry points increase the number of screening areas required for monitoring and security. Several other state capitols with legislative offices located in multiple buildings have voiced concern with security and crowd control. At a recent National Conference of State Legislatures additional security concerns for multi-building configurations was a discussion point.

5. Specific concerns were voiced related to inconveniencing the public. Multiple legislative buildings would limit convenient access to the Chambers and public hearing rooms if you had to go from remote building to remote building.

Connection Between the Capitol Annex and Historic Capitol

It is of paramount importance that the new Capitol Annex be physically linked to the Historic Capitol in a way that maximizes public engagement. By maintaining the physical connection between these two buildings, the larger Capitol building can truly become a stronger “People’s House” that welcomes people from the moment they walk onto the site to when they enter the building. A feeling of public ownership encourages citizens to understand that they play a role in government. They can enter the building, meet with elected officials, attend a public hearing, visit the Chambers, or simply enjoy the ability to observe the democratic process.

Conceptually, if some of the existing office and hearing rooms are removed from the connection zone between the Capitol Annex and the Historic Capitol a more convenient and graceful connection can be created. A well-designed connection would make accessible travel more convenient and provide a more inviting path for all. We recommend that this connection be enhanced with the Capitol Annex reconstruction, by aligning the first floor of the Capitol Annex with the First Floor of the Historic Capitol. Potential alignments between the upper floors should be analyzed as well.

Persons requiring accessibility assistance should be able to travel the same direct routes as the general population, rather than being required to travel circuitous paths. State and Local government facilities must set an example for others to follow.

Historical Importance of the Capitol Annex

The Historic Capitol is a historically significant building that deserves a high level of care and protection. The Capitol Annex also has some historical significance. Constructed in 1952, it is currently 65 years old, and the exterior appears to have retained much of its original integrity. These factors were discussed by the design team while considering replacement of the Capitol Annex. Some portions of existing Capitol Annex exterior walls could remain in their current location as exterior elements or be integrated inside a new building as corridor walls or interior courtyard walls. Other exterior wall elements could be salvaged, such as the beautiful cast aluminum relief panels in the east entrance doors, and then integrated into the new building. The interior has not retained much of its original character due to several remodels and renovations, so there is not as great a concern with retaining the interior elements. However, we would like to note that in renovations for the Idaho and Wyoming Capitols we discovered beautiful historic elements such as doors, clocks, and an elevator behind modern day remodels. If found, such artifacts could be incorporated in future displays.

Parking Considerations

For various reasons, the parking below the building has been questioned by both building occupants and the design team. Building users like the idea of having convenient parking under the Capitol Annex, but generally believe continuation of this feature poses life safety and security concerns. Only a few of the interviewed users thought it would be exceptionally detrimental to their daily functions to remove the parking from the Capitol Annex basement. Excerpted from the GSA Site Security Design Guide – Government buildings *"have the responsibility to express to fellow citizens the stability and endurance of their government, while representing the openness and transparency that is vital to democracy. This responsibility continues to motivate us today, even as we respond to changing security requirements that call for innovative physical solutions."* For security reasons not detailed within this report's text (see *APPENDIX B – Security Meeting Minutes* for a partial discussion of this issue) there is a good argument to substantially remove personal vehicle parking from the basement level of the Capitol Annex. Security design recommends:

1. Only specific and controlled vehicles should be allowed in close proximity to the Capitol buildings. Controlled is defined as under the specific control of security persons of the Capitol.

2. Non-controlled vehicles should be prohibited from encroaching within specified standoff distances from significant Government buildings. This includes city maintenance vehicles as they are not in the control of the CHP or Sergeants-at-Arms. Standoff zone or perimeter is defined: "A security perimeter keeps vehicle-borne explosives at a distance, thus reducing potential destruction and harm. Depending on the risk analysis, the perimeter may require secured or unsecured standoff." Credit: GSA Site Security Design Guide.

3. All Non-controlled vehicles, including delivery trucks, should be inspected outside the standoff distances.

For these reasons, we recommend that only controlled vehicles be allowed to breach the standoff zone or park near the Capitol. It should be acceptable for capitol security to authorize specific vehicle traffic to enter designed vehicle areas.

A design concept that can bridge the need for security and elected official drive up access is as follows:

1. Create as part of the Capitol Annex a carport for: elected official drop-off, previously inspected delivery vehicles, Governor's security parking, and security staff driven vehicles.

   Option 1 – If located on the Capitol grounds, this structure could be underground to maintain sight lines and preserve more of the appearance of the surrounding park. The south lawn area appears to be a good location for an underground garage.

This location could afford a direct secure walk connection into the Capitol Annex. This option has been included within the construction cost analysis.

a. The underground parking area may include an adjacent secure delivery dock.
b. The underground parking area may be more efficiently designed as a valet tandem parking stall facility for Members.
c. Parking in the underground garage should be under the control of the Senate and Assembly Sergeants-at-Arms and Governor's security staff control.
d. Access control should be prior to entering the underground garage.
e. Driver services for Members should occur here.

Option 2 – Establish a new private parking lot/structure for legislative members and elected officials within close proximity to the Capitol, but outside the Stand-off Zone. Provide secure shuttle service from the new lot to the Capitol carport.

a. Provide secure shuttle service from carport to the parking lot.
b. Provide a secure waiting area at the parking lot and specific call numbers requesting pickups.
c. Establish within the carport enough parking areas for the Sergeants-at-Arms to provide driver services.
d. Establish a parking area for security vehicles in the carport.
e. Create a loading dock, remote to the Capitol, and connecting tunnel for deliveries.

Option 3 – Create an underground pedestrian tunnel route to the Capitol from a remote parking area as noted in Option 2.

a. Create a loading dock, remote to the Capitol, and connecting tunnel for deliveries.

Visitor Entrances

To create a more robust visitor experience we recommend that the visitor traffic be routed through their own entrance(s). A new entrance could be established on the west side of the Historic Capitol, which would allow all visitors to enter at the lower level. With the appropriate signage (wayfinding) installed around the site, two separate visitor entrances could be established. This would allow tourism-oriented visitors and students wishing to visit the Historic Capitol to be directed into the California Parks tourism experience, and business oriented visitors wishing to meet with their elected officials to be directed to the offices and hearing rooms in the Capitol Annex. Both visitor entrance paths could be enhanced by integrating displays such as: county displays, history of the state of California, the history of the government, the legislative processes, and other types of displays to make their experiences memorable.

Security screening could be integrated into these entrance paths. This may include large interior gathering areas which would limit the time a visitor would be required to wait outside the building. The entrance security process should be scalable with the crowd size. It may be logical to have the business visitor entrance deliver the visitors close to commonly used hearing rooms. Whether there is a single visitor entrance or multiple entrances, it will be critical to think through how security, information, signage, and displays can be seamlessly integrated to provide an exceptional visitor experience.

Office Space Allocations

The majority of the office spaces within the programming analysis are Members Office Suites and Standing Committee Office Suites. Focusing only on legislative office suites (omitting exceptionally small and large suites and omitting the committee and member shared suites), we found that most offices were consistent in size. Senate member office suites are typically 100 square feet larger than the Assemblymember suites. Suites typically have four or five offices with an open area. We found that Senate suites typically have one more office. That accounted more or less for the extra 100 square feet. Member offices were close in space/area and the staff offices were similar to other offices of the same job position. The staff offices consistently fall short of the standard office areas applied by the state to all other government offices. Most suites contained more occupants than would be expected and include areas for part-time, temporary, or intern staff. For the purposes of the study, one Member Office Suite

configuration was designated into the programming analysis. This is based on the feedback received in the interview process and studies of typical layouts that could be applied in the future.

Standing Committees do not need to be in the Capitol Annex; however, if possible, it would be preferred that they have more of a presence in the Capitol Annex. Currently, there are 25 Assembly Standing Committees in the LOB and seven Assembly Standing Committees in the Capitol. There are 21 Senate Standing Committees; six of these are not located in the Capitol Annex. There are also eight Joint Committees during the 2017-18 Regular Session to consider. Select (fact-finding) Committees change often and do not need to be in the Capitol Annex. There was some discussion as to whether all the Standing Committees should be in the building, specifically the smaller committees. For the purposes of this study, the committees have been separated into Small Suites of 1-4 staff, Medium Suites of 5-7 staff, and Large Suites of eight or more staff. If it is determined that small Standing Committees do not need to be separately-housed in the building, this category can easily be removed from the programming analysis.

Conferencing Spaces

There are multiple types of conference spaces required in the Capitol Annex. The Programming exercise revealed that additional conference spaces are needed locally within group areas for quick availability and quick access. Additional conference spaces are also needed in areas that can be shared by multiple groups. Multiple size conferencing spaces would be ideal for flexibility.

Special consideration should be made to evaluate the following types of conferencing/meeting spaces and the special needs—technology, accessibility, security and functionality—they require:

- Hearing Rooms
- Caucus Rooms
- Conference Rooms

Hearing Rooms

The size and quantity of existing hearing rooms are frequently inadequate for the scale of public interest in legislative deliberations. Larger hearing rooms are needed, and more of them. Having a variety of sizes of hearing rooms with adjacent ADA sized corridors will aid the legislatures' deliberative work. Pending further decisions about the Capitol Annex building footprint, field investigations and interviews suggest planning for a minimum of eight hearing rooms within the Capitol Annex. Additional hearing rooms would ease scheduling of the rooms and facilitate the legislative process. This has become a limiting factor due to current hearing room quantities.

One possible solution may be to consider adding more hearing rooms below grade since they do not need windows. These could be located outside the current Capitol Annex footprint or under the current Capitol Annex (provided the Capitol Annex is removed and rebuilt). Currently the basement does not have adequate headroom for large hearing rooms. In the event that the First Floor of the Capitol Annex is raised to match the First Floor of the Historic Capitol, then a considerable amount of headroom would be gained in the basement and ceiling heights could accommodate large hearing rooms.

Fourth Floor hearing rooms are currently very heavily used and the corridors outside of them are too small. Benches in the corridors also take up space. Adjacent, flexible rooms would be helpful. Movable walls could be considered. However, there are acoustical and appearance impacts with this approach. Microphone and speaker systems can be loud, overcoming the acoustical properties of movable walls. Hearing rooms also need a formal appearance that can be hard to achieve with movable walls. In an effort to alleviate the overcrowding that occurs at some hearings, it would be worthwhile to review options for additional rooms

within the Capitol Annex that have live video and audio feeds from the hearings. Also, procedures could be considered whereby persons can testify at a public hearing electronically from a remote location. The public uses hearing rooms to a high degree. Consider two separate hallways to hearing rooms: one public and one private for authorized personnel and sheltering-in-place use.

Caucus Rooms

These rooms are multi-functional spaces. They need to remain near the Chambers. Currently these are part of the Capitol Annex, but the Chambers are part of the Capitol construction. If the Capitol Annex is removed, consideration needs to be made to accommodate their use at least temporarily during construction.

Conference Rooms

Three general sizes of conference rooms have been included in the analysis. Small conference rooms that seat 4-6 people, Medium conference rooms that seat 6-12 people, and Large conference rooms that seat 12-18 people.

The quantity of conference rooms should be based on a percentage of members divided by Senate and Assembly. It is intended that these meeting spaces are shared among the occupants divided throughout the floors.

Overcrowding

The new or renovated Capitol Annex must include more conference rooms, more and larger hearing rooms, wider corridors, improved vertical circulation, additional dedicated space for copy/storage functions, and better wayfinding for visitors to help segregate them from the day-to-day occupants of the building.

Code Upgrades

The new or renovated Capitol Annex must be code compliant with respect to the adopted edition of the California Building Codes. It must meet or exceed minimums for exiting, materials use, fire, life safety standards, and other provisions of the code. The structure must also meet the requirements of the ADA Standards for Accessible Design and Title 24. LEED Silver certification is the minimum requirement for any new large-scale construction per Executive Order B-18-12, but as a leader in sustainable design the State of California may choose to set a LEED goal for Gold or even Platinum certification.

Health, Safety, and Welfare

Twelve years ago in 2006 DGS conducted an Infrastructure Study that details extensive upgrades required to maintain the existing Capitol Annex. We have included the Volume I executive summary of this DGS report within this document (refer to DGS Volume II pages 6.1-6.4 and 7.1-7.8 for fire, life safety, and hazardous materials information). The DGS study focused on making the systems functional, building safety, and comfort levels but did not address functional standards for usability, exiting, public engagement and comfort.

Mechanical Systems

The new or renovated Capitol Annex should include a new HVAC system. For known existing issues refer to the "Infrastructure Study, Volume 1 and Volume 2, Prepared by DGS, August 18, 2006." We have included the Volume I executive summary of this DGS report within this document (refer to DGS Volume I pages 5.1 through 5.9 for mechanical systems information).

Plumbing Systems

The new or renovated Capitol Annex should incorporate additional toilet rooms, drinking fountains, and janitorial areas that at a minimum meet the quantities required by the International Mechanical Code. For known existing issues refer to the "Infrastructure Study, Volume 1 and Volume 2, Prepared by DGS, August 18, 2006." We have included the Volume I executive summary of this DGS report within this document (refer to DGS Volume I pages 5.9 through 5.11 for plumbing systems information).

Electrical Infrastructure

The new or renovated Capitol Annex should incorporate a comprehensive new electrical system that is sized for projected future growth. For known existing issues refer to the "Infrastructure Study, Volume 1 and Volume 2, Prepared by DGS, August 18, 2006." We have included the Volume I executive summary of this DGS report within this document (refer to DGS Volume I pages 6.1 through 6.12 for electrical systems information).

Technology

The new or renovated Capitol Annex should incorporate a new telecommunications system, two updated television studios, and new assistive listening systems in public hearing rooms. There should be technology provisions for live video and audio display of hearings in large spillover rooms, so if a hearing room is full, there is the opportunity for citizens present in the building to see and hear the proceedings. Also, technology for remote testifying at public hearings should be considered for those not in Sacramento. For known existing issues refer to the "Infrastructure Study, Volume 1 and Volume 2, Prepared by DGS, August 18, 2006." We have included the Volume I executive summary of this DGS report within this document (refer to DGS Volume I pages 7.1-7.19 for telecommunications systems information).

Wayfinding and Public Access

When the public enters the building, most of what they want to see is within the Historic Capitol. At present the three existing entries are through the Capitol Annex. It has been discussed that it would be beneficial to refine how visitors experience the building by providing site wayfinding signage to direct visitors to the Historic Capitol rather than the Capitol Annex.

According to the DGS Facilities Status Update (April 28, 2017) the Capitol Annex houses approximately 1,500 occupants, and there are more than 1.5 million people who visit the California State Capitol Building each year. Directing some visitors to enter via the Capitol would be beneficial. A new entry could provide access directly into the basement of the Historic Capitol. Some visitors will continue to enter the building via the Capitol Annex, but with more visitors using the Historic Capitol entry, Capitol Annex entries would be much less congested and quicker for people who work in the building. Note: When fully occupied during session, the Annex has between 3,000 and 4,000 occupants.

Capitol Park Impacts

If the project proceeds in such a way as to impact Capitol Park, the design team must strive to minimize disruption of park amenities. The grounds surrounding the Capitol Annex have a special history and aesthetic that cannot be replaced. The goal should be to preserve or enhance a welcoming Capitol Park with respect to its expansive feel, openness for public use, sight lines, and diversity of flora. If impacts to the park are required, the design team would work with specialists to perform an archaeological survey of the impacted area prior to any construction. Given the long history of Sacramento as a place of human habitation, there is a very real possibility that cultural resources or artifacts may be present on the grounds. A survey would provide needed information and enable decisions to be made before any archaeological treasures are disrupted.

The design team has reviewed the Capitol Park Memorial and Significant Tree Plan and the Capitol Park Tree Survey which provide information on nearby memorials and trees, including the recent health of the trees and if there is any potential for relocation.

Building Flexibility

The new or renovated Capitol Annex must have a long life-cycle and be adaptable to future needs. This requires that it can be easily and efficiently maintained and that the HVAC system can be maintained over a long period of time and be readily modified in the future to support floor plan flexibility. This must also be the mindset for the electrical, plumbing, and telecommunications infrastructure.

Specified materials must be of a quality and finish to last a long period of time. The floor plan design must be flexible to minimize the need for future remodels. At the same time, greater consistency in the sizes of Member suites will minimize the need for Member relocations.

We also recommend including centralized breakrooms, including dish-washing stations, on each floor, rather than accommodating custom kitchenettes in each office suite. There should be a minimum of one break/dish-washing room per department or two per floor. These rooms must have code compliant power and plumbing for appliances and sinks.

Structural Analysis and Recommendations Based on Review of Past Reports Analysis

A seismic analysis was conducted on the Capitol Annex in 2007 by Buehler & Buehler Structural Engineers to:

- Verify the Seismic Risk Level of the Capitol Annex
- Document seismic and other structural deficiencies throughout the Capitol Annex
- Develop recommendations for correcting these deficiencies

The Capitol Annex has largely remained structurally unmodified since the 2007 report was generated, and most of the analysis and recommendations are still valid. Following is a brief summary of the report and a summary of its recommendations.

After an extensive analysis, the structural risk level was found to be Risk Level IV. This indicates that during a seismic event, the building is expected to perform moderately well. Damage is expected to be moderate with substantial structural repair required and extensive non-structural repair required. Risk to loss of life is considered moderate.

The Capitol Annex was constructed under the 1949 Building Code. It was originally designed as an independent free-standing structure, separated from the Capitol by an air gap. Although there have been numerous renovations throughout the building over time, it doesn't appear that these modifications have changed the structural system. The building possesses substantial strength, but lacks ductility or flexibility to resist damage during a seismic event. This lack of modern structural design is somewhat alleviated by the less powerful earthquakes that are projected for the Sacramento area. The structure also contains an independent steel frame encased in the concrete shell that should provide the ability to allow substantial damage to the concrete walls without a collapse of the floor or roof.

In general, the structural system appears to be in good condition. In some areas, there is significant failure of the floor finish and unusual sloping in the corridors. The cause is unclear, but it is reasonable to assume that either significant deflections were built into the floors during construction, or deflection has occurred over time. It appears that the floors are currently fully loaded, and no significant damage has occurred. This tells us that the performance of the floors should not deteriorate. However, proposed additional loads on the floors should be structurally reviewed.

In conclusion, the Capitol Annex is a well-built structure with little damage observed. However, since strength was valued above ductility at the time the structure was built, the building would not be able to adequately absorb the energy of a significant earthquake. It would be expected to withstand a major Earthquake, but with significant damage.

Recommendations (Structural)

In the event the existing Capitol Annex building is to be retained, the recommendations discussed in this section are designed to help reduce the amount of damage sustained by the structural system during a seismic event. These upgrades are recommended to reduce the risk from a Level IV to a Level III.

Concrete Shear Walls: The concrete shear walls are not adequate to support a Risk Level III. Therefore, it is recommended to add new concrete shear walls to either the building exterior (closing some of the windows), or building interior (preserving windows, but more disruption to the occupants). In addition, new drag ties would be required to be installed at the new interior walls, and the existing foundations enhanced.

Interior Opening Ties: Install new floor corner reinforcing ties. These ties could be either structural steel enhancements to the existing beams or Fiber Reinforced Polymer strips applied to the top of the floor.

Collector Ties at Interior Shear Walls: New collector elements should be installed at the ends of the existing interior shear walls. These collectors could be either structural steel enhancements to the existing beams or Fiber Reinforced Polymer strips applied to the top of the floor.

Unreinforced Clay Tile Partitions: Remove existing clay tile partitions and replace with metal stud and gypsum board partitions.

In all cases structural modifications will require significant construction. It is likely that a large number of the Capitol Annex occupants will need to be relocated during the construction activities. The new structural assemblies may change the way areas work as compared to the current configurations. Some of the current usable area may also be lost through these efforts as space is yielded to allow for structure.

TABULAR DOCUMENTS

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TABULAR DOCUMENTS BASED ON EXISTING BUILDING FLOOR PLANS, SURVEYS, AND REPORTS

General discussion

After an extensive review process of known information (past reports, current floor plan uses, and distributions of uses and users) as well as extensive building occupants/user input, we created a tabular document (spreadsheet) which details pertinent counts of spaces and the appropriate area calculations. The document is logically arranged with these headings: Department, Areas (by Name), Quantity, Square Foot Per Space, Current (current square footage), Projected (projected square footage), and Overall Square Foot Totals.

We reviewed these information sources and created several tabular documents which allowed us to identify trends which have the most support by the current users of the California Capitol Annex to facilitate conducting the business of state government.

During the many user interviews, we noted that most people were open and brutally honest with their opinions. Most of the people interviewed had extensive experience working in the Capitol. The users that we interviewed were not architectural designers. Our interviews asked specific questions in several different ways to understand how the user felt about the current facility and how the job of the government could be enhanced by various design concepts.

Architectural design concepts are not concrete and do not try to create the ideal building since a building's use is played out over a very long time and therefore should endeavor to be flexible. We asked questions which targeted suggested improvements. We asked many users to provide thoughts that could stand the test of time for a period of 25 to 30 years. We asked specific questions such as: should there be one building, two buildings, or more? This type of inquiry was intended for the users to question the normal state of things.

Of note is the fact that most users, when interviewed about their impressions of the current building and future possibilities, had a difficult time seeing beyond what they currently experience or think of as normal. When pressed to comment on the future of the capitol building space needs, most has some disparaging comments about the current Capitol Annex building. Our analysis yielded some interesting information.

For this discussion, we offer the following definition of an architectural program: Programming is a process which seeks to understand the needs of the Owner related to the built environment associated with the Owner's uses. It includes functionality and quantitative requirements (area—typically in square feet per space needed) and defines intangible design needs. Programming seeks to involve interested parties in the definition of the scope of work at the beginning phase of the design effort. The process has an emphasis on analyzing gathered data at the beginning of the process so that the design is based upon solid decisions and a defined scope of work.

The following is a brief discussion of specific space groupings in the architectural program. This text is best used if you are also looking at the architectural program. To maintain consistency with other State of California government buildings, we elected to use the Real Estate Division Guidelines issued by DGS. These guidelines offer a consistent hierarchy of office sizes based on position name. We programmed shared spaces for building occupants (conference rooms, copy/print rooms, kitchenettes/break areas, private toilets, etc.) and shared spaces for the public (toilet rooms, waiting areas, etc.) per floor.

Member Suites: We asked various questions related to Member office suites and overwhelmingly the opinion was to use consistent suite sizes, which is a best practice, if one allows for some consistent variation tied to specific leadership roles/responsibilities.

One note of clarification in the Member Suites data: The current square footage noted within the programming analysis spreadsheet includes circulation while the projected square footage indicated does not. Circulation for the new programmed area is included in the overall calculation at the end of the tabulation. So even though it seems that the average Member Suites have decreased in size, this is not the case. The new suite size has been programmed to accommodate the actual way these suites have been historically occupied.

Standing Committee Suites: We asked various questions related to committee suites and for programming we resolved that three sizes of suite types were plausible. We took into consideration the average number of staff in the Committee and the different types/sizes of the committees. The dominant opinion was that each committee suite should be an independent suite and not shared with another department or Member Suite. Certain positions require private office and guest seating is needed in the private offices. Standard office sizes were used for the calculations similar to the Member's Suites. Use of conference and break areas are planned to be shared within the floor similar to the Member Suites.

Secretary of the Senate: It was determined that there is inadequate space currently and for forecasted growth. This is specifically an issue with short-term and long-term storage, regardless of electronic storage improvements over time. The current space is disjointed and does not have an adequate waiting area for guests. With the addition of guest waiting, storage, and area Guidelines adherence, the area for this department should be increased by 20%. Conference rooms are designated to be shared on the floor. Specifically, they desired a private kitchenette located within this suite for privacy.

Sergeant-at-Arms: Both the Assembly and Senate Sergeant-at-Arms facilities are grossly inadequate in area needs and functionality. Area Guidelines adherence for office spaces, as well as special needs related to video displays, and support areas improvements were programmed. The Senate Mail Room has been made larger as well as lounges and kitchens. The Assembly Mail Room is accounted for under the Joint Committee on Rules within the programming document. Overall the space allocation almost doubled for both groups. In the architectural program, caucus and conference rooms are included within each department's individual space; however, it is expected that staff can use shared break rooms similar to the Member Suites.

Senate Health Unit: This group serves the entire Legislature. The current space is functional but lacks confidential exam rooms. Offices are currently part of the circulation space which is not conducive to private conversations. Better circulation and storage for medical equipment is also needed. Overall the space allocation for this department increased by 50%. The sizes of the staff private offices, due to confidentiality, have been made consistent with Guidelines for private offices. Conferencing and break areas are shared with other departments on the floor similar to the Member Suites.

Joint Committee on Rules: Most of the departments overseen by the Joint Committee on Rules are not currently in the building, nor do they need to be in the future. There is a small suite currently located near the Chambers that is adequate, however, it would be helpful to add additional open work spaces for IT. Office sizes have been made consistent with the Guidelines and it is assumed that larger, non-confidential meetings will be held in shared conference rooms similar to the Member Suites.

Assembly Chief Clerk: The current space is functional as is designed. However, for future growth it would be necessary to add three additional offices. All office sizes have been aligned with the Guidelines for consistency. This group has a need for conference rooms within the suite, however break areas can be shared on the floor similar to the Member Suites.

Legislative Counsel: Through information gathering it was determined that the current space allocation is adequate. It is not anticipated this group will see an increase in staff in the next 25 years. The only addition is one additional work station and all offices have been aligned with Guidelines. The main requirement is that the suite is self-contained with its own conference room and kitchenette. It is important that the Legislative Counsel be located near both Chambers of the legislature.

Bill Room: Currently located in the Historic Capitol, multiple groups suggested this use would be more beneficial if located near the mail room functions of the Capitol Annex. For this programmatic study that is the direction taken. All offices aligned with Guidelines and staff will utilize common conference and break rooms similar to the Member Suites.

Media & Television: Both groups from Assembly and Senate were interviewed. There are significant space inadequacies, mostly due to advancements in technology and the age of the facility. There are no typical office spaces—mostly unique support spaces and combined working areas. Staff will use common conference and break rooms similar to the Member Suites.

Facilities Management: This group needs more space for trash and recycling (waste management). The loading dock needs six bays and a separate dock for delivery of waste collection. This group needs to be near freight elevator, lockers, changing rooms, showers and dedicated conference room. The department has a dedicated break room that is shared for all the Facilities staff.

First Floor Programming: These spaces were programmed by DGS in late 2017 and provided to our team for incorporation into this report:

Governor: The current Governor's suite is very inadequate. Primary needs include more secure pathways for the Governor to use and more security in general, such as a dedicated elevator and exit way. Most of the current offices are undersized. This entity has many guests throughout the day which leads to congestion. With standardization of offices the suite is more organized and significantly larger. Based on specific conference room types and sizes, private conference rooms are located within the suite, as well as private and secure break rooms.

Lt. Governor: This office suite will have a reduced footprint as the existing space is underutilized and is not expected to increase over time. The suite needs a separate reception area, shared work space and a dedicated small conference room. There is a small kitchenette within the suite, but otherwise, staff will use common break areas on the floor.

Department of Finance: There is a slight reduction in space allocated mostly due to standardization of office sizes. The department needs a dedicated waiting room for guests using the conference rooms. There is a need for dedicated storage within the suite and a private break area.

California Highway Patrol (CHP): Increased security needs have led to more space allocated for this group. Separate staff work areas for each branch and raised access flooring for a better designed dispatch area are also needed. The secure area should have its own restrooms, conferencing and break areas. Space for a three-person kiosk should be located at each entrance.

See attachments:

APPENDIX D – Interview Sheets

APPENDIX E – Existing Building Use Evaluation Spreadsheet

APPENDIX F – Future Space Planning Analysis

CONCLUSIONS AND RECOMMENDATIONS

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CONCLUSIONS AND RECOMMENDATIONS

Upon its completion in 1952, the Capitol Annex greatly advanced the California public's accessibility to its elected leaders. As California's population increased, public participation in state governance also increased. The Capitol Annex has suffered from the passage of time and is no longer well-adapted to the contemporary needs of an efficient, productive and accessible government. As with many buildings of its age, the Capitol Annex has life safety and building code deficiencies including stair widths, exit widths, an incomplete fire suppression system, and insufficient plumbing fixture counts. The Capitol Annex also fails to meet modern requirements for disabled persons both for persons who work in the building as well as visitors to the building. The structure is not energy efficient, which does not reflect the goals and values of the people of California or their elected leaders.

We have evaluated the space needs based on considerable input and research which lead us to the recommendation that the Capitol Annex needs to be rebuilt. A new Capitol Annex would enable the facility to save energy, be built of sustainable materials, and limit greenhouse gas emissions. A new facility would replace inefficient aging mechanical, electrical, and telecommunications systems which currently cause problems with occupant comfort and productivity. While extensive maintenance and replacement of this equipment is planned, it cannot fully achieve current and future energy efficiency goals.

Overcrowding, poor public access, and inefficient engagement opportunities between elected officials and the public cannot be adequately improved without adding significant area to the Capitol Annex. The overwhelming opinion that more conference spaces and hearing rooms are needed, in a variety of sizes, also requires additional area to be incorporated into the building.

While the current structural system may be functional, the column spacing creates significant challenges to achieving consistent suite and office sizes in compliance with state standards. It also impedes the addition of larger hearing rooms. According to the 2007 seismic evaluation, upgrades to the existing structural system are recommended. Among the recommendations are additional shear walls that would take up usable space, make the building less flexible, and further limit the ability to achieve consistent suite sizes and add larger hearing rooms. The existing column spacing and building footprint also impact the amount of daylighting that can be brought into the building. Many representatives we interviewed indicated that incorporating daylighting in future modifications to the Capitol Annex should be a priority.

State standards for government offices, more consistent office suite sizes, the addition of common use facilities (such as toilet rooms, exit stairs, elevator upgrades, shared dish cleaning and printer rooms), the addition of areas for public waiting (rather than benches in the primary circulation), code compliance, clear circulation, daylighting, and efficient security all lead to a need for significant area being added to achieve the stated goals and desires.

The existing Capitol Annex is approximately 325,000 gross square feet (not including the basement parking area or light wells). The tabular space programming document calls for the Capitol Annex to be more than 514,000 gross square feet (488,598 square feet for the Annex plus 25,500 square feet for a new visitor center and additional public engagement area), which indicates that the existing Capitol Annex is around 189,000 square feet too small for the demands of an accessible, participatory, and deliberative democracy in the Nation's most populous state. This 189,000 square foot difference does not include the significant ramifications of creating a building configuration that addresses daylighting within most office spaces.

There is a need to re-envision a Capitol Annex that incorporates modern legislative offices, adequate hearing rooms, secure and accessible entries and exits, greater opportunities for public participation and civic engagement, modern working environments, and a sense of the great State of California's distinguished history and culture.

We recommend locating the primary hearing rooms in a single consistent location to allow public engagement with their government and participation in the governmental process. The Capitol Annex Project provides an opportunity to interweave a rich vision of public hospitality in all facets of the Historic Capitol and updated Capitol Annex. This can be accomplished through improved technology, more accessible spaces, walkways with clear wayfinding signage from Capitol Park to the building interior, and a myriad of other details—both obvious and subtle. California's public can feel welcome and part of the building's life through lines of sight, inviting vistas and appealing interior views.

With a remodel and expansion, many of the existing Capitol Annex issues could be alleviated, and the square footage requirements identified in the programming spreadsheet could be implemented. However, given the constraints of the existing structural system and site, the limitations of the existing mechanical, electrical and telecommunications system, and the demand for a comprehensive new design, we recommend removing the existing Capitol Annex building and constructing a new facility.

The strong consensus among those interviewed was that the new Capitol Annex facility should be a single building located adjacent to the Historic Capitol. The functional needs of the Senate and Assembly Chambers, which should remain in the Historic Capitol, require that the Chambers be in close proximity to the Secretary of the Senate, Assembly Chief Clerk, Legislative Counsel, and the Assembly Committee on Rules. Also, the areas overseen by the Sergeants-at-Arms during lock-down for both the Senate and Assembly (caucus rooms, lounges, kitchens, etc.) need to remain adjacent to the Chambers. With these adjacencies in mind, we recommend the new Capitol Annex be a single building, a single "People's House," constructed in the same location as the existing Capitol Annex. This maximizes the relationship with the Historic Capitol, yet minimizes impacts to the surrounding park and historic landmarks. With this approach, sight lines of the Historic Capitol would be preserved by the thoughtful use of underground facilities (which spare the cost of façade, window, and external treatments), and the adroit use of tree screens.

To facilitate the removal and reconstruction of the Capitol Annex in its current location, we recommend all Capitol Annex uses and personnel be temporarily relocated during construction rather than phasing the project with the occupants remaining in the building. This approach will be more cost effective and save construction time. A shorter construction duration will ultimately be less disruptive to the building occupants, the public, and the work of government. Planning the swing spaces for the temporary Capitol Annex uses must remain a priority as the project moves forward.

The following is preliminary cost information for the replacement of the Capitol Annex. Costs are based on anticipated costs per square foot. As the project progresses, and concept drawings are generated, the cost estimate can be refined to fully reflect the new Capitol Annex configuration, specific connection to the Capitol, materials, and site impacts. The cost estimate has been broken down into three subset elements:

- **ANNEX REPLACEMENT:** Costs indicated are for the removal of the existing Capitol Annex and construction of the replacement Capitol Annex. As indicated above, the new Capitol Annex is to be a single building adjacent to the Historic Capitol, located where the current Capitol Annex now stands. **Civic buildings such as this are to be a permanent embodiment of our state's values, challenges, and aspirations. For a People's House, a building which is unique in each state's facilities roster, it's design should be especially dignified, welcoming, and reassuring.** The purpose of this building is for the public and the public's government. It is to further civic engagement for all Californians, as well as to welcome the global community into one of the premier buildings in which the democratic process is on display. The building is to be fully accessible with specialized civic engagement and public accommodations beyond what is required of other governmental structures.

Massing, daylighting and views, and materials selection are of paramount importance to the design of the new Capitol Annex to ensure a minimum 50-year life. Due to the heavy use of the building – there are more than 1.5 million people who visit the California State Capitol Building annually – the materials need to be high-quality, timeless in design, and durable. The hierarchy and organization of the facility is to be such that minimal future upgrades will be needed. Specialized structural requirements will be needed to afford large volume column-free hearing rooms. These rooms, anticipated on a lower level, will satisfy a public need and desire by enabling more Californians to readily observe and testify at public hearings. By potentially lowering the basement for these rooms, dewatering during construction and provisions for waterproofing the lower subgrade structure may be required. Realigning this area of the building will also facilitate a more direct floor to floor connection for the first and second floors. This connection will provide better direct access for all the users of the building.

The new Capitol Annex is to be among the most energy efficient Capitol Buildings in the nation. A well-designed and constructed exterior envelope, intelligent and efficient mechanical system, and a responsive lighting system with intelligent controls are required. Options for reducing the building's environmental footprint, such as on-site power generation, should be investigated and considered in the new design. "In California, there is something called global warming. We're four degrees warmer than we were historically. Our forest fire season is months longer. It's almost year-round. This is real stuff." Governor Edmund G. Brown Jr.

New Annex total cost is estimated to be: $ 506,858,000.

- **PARKING STRUCTURE:** Costs indicated are for the construction of a new secure underground parking structure, loading dock, and Governor's parking area to be built south of the Capitol Building. The vehicle entry at N and 12th Streets would remain in its current location but the parking and loading lock would be constructed between the Capitol and existing sidewalk. Locating these uses underground preserves a welcoming Capitol Park by maintaining the expansive feel, openness, and sight lines that lead guests to the Capitol. It also enhances facility security, as the screening of vehicles can occur beyond the secure perimeter of the Capitol Annex footprint. Included in the cost is new landscaping to be installed over this underground facility.

New parking structure is estimated to be: $ 6,409,000.

- **VISITOR'S CENTER AND PUBLIC ENGAGEMENT:** Costs indicated are for a new ADA compliant Visitor's Entry to the Historic Capitol to support civic education and engagement, and to provide a more welcoming arrival for building guests. This welcoming culture was conveyed by the Historic Capitol's original designers through the use of symbolism, such as with the pineapple found in wooden detailing on the stairs. **The pineapple, a rare and special delicacy for Californians of the 1860s-1870s to encounter as a guest in another's home, is used to symbolize the welcoming spirit of hospitality which this most public of state buildings is intended to express.** All changes to this building should remain true to this open, welcoming, and hospitable aspiration of modern California's forbears.

Included in the cost are site signage and amenities to subtly direct tourists and general visitors to this entry, which facilitates the ability of those with a business need to use other available entrances. Also included is area for circulation within the new Capitol Annex that can be attributed to widening corridors and providing internal public amenities that are specifically due to enhancing public access and engagement within the new Capitol Annex.

Since the new Capitol Annex will be the People's House, it will draw attention and heightened security measures will be required for both the building's workday occupants and for visitors. Specialized technology and dedicated spaces for those persons charged with facility security will be needed. The fourth-grade students within the state visit the Capitol Building each year, and providing a safe and secure environment for them, and all guests, is critical. This building exists for the public, and is a place to receive the public, so investigating a better alignment of floors between the Capitol Annex and Historic Capitol is justified to enable barrier-free public access directly between the two buildings. Attention to the physical connection and relationship between the new Capitol Annex and the very Historic Capitol is needed, and great care will be required during construction at this interface.

New Visitor Center and Public Engagement costs are estimated to be: $ 29,964,000.

California Capitol Annex- Replace

Construction Cost Analysis

	area (sf)	cost/sf	total budget
Construction of a new Capitol Annex	488,598	$ 950.00	$ 464,168,000
Demolition of the existing Capitol Annex	325,000	$ 20.00	$ 6,500,000
Totals			$ 470,668,000
Escalation (yr 1)	2.50%		$ 482,435,000
Escalation (yr 2)	2.50%		$ 494,496,000
Escalation (yr 3)	2.50%		$ 506,858,000
TOTAL NEW ANNEX COST			$ 506,858,000

Note 1: Cost does not include swing space development for off-site temporary governmental functions for the duration of construction. Final swing space costs may include remodels of existing buildings, new construction, or rent.

Note 2: Cost does not include moving costs from Annex to swing space, and moving costs back into the Annex when completed.

California Capitol Annex- Parking Structure

Construction Cost Analysis

	number of cars	area per stall (sf)	area	cost/sf	total budget
Construction of a new underground parking structure	130	300	39,000	$ 105.00	$ 4,095,000
New loading dock budget number			8,000	$ 70.00	$ 560,000
New Governor's parking area			4,500	$ 105.00	$ 473,000
New Landscape costs on the Garage			51,500	$ 16.00	$ 824,000
Totals					$ 5,952,000
Escalation (yr 1)	2.50%				$ 6,100,000
Escalation (yr 2)	2.50%				$ 6,253,000
Escalation (yr 3)	2.50%				$ 6,409,000
TOTAL NEW PARKING STRUCTURE COSTS					$ 6,409,000

Note 1: Landscape costs are assumed to be grasses and woody shrubs.

California Capitol Annex- Visitor's Center

Construction Cost Analysis

	area (sf)	circulation/ structure/ utility multiplier	total area	cost/sf	construction costs
Cost for additional circulation for Public Access	19,500	included in area	19,500	$ 950.00	$ 18,525,000
Public entrance/ visitor experience	6,000	included in area	6,000	$ 1,050.00	$ 6,300,000
Site modifications including wayfinding, grading, and new hardscape and landscape- Budget Cost					$ 3,000,000
Totals			$ 27,825,000		
Escalation (yr 1)	2.50%		$ 28,521,000		
Escalation (yr 2)	2.50%		$ 29,234,000		
Escalation (yr 3)	2.50%		$ 29,964,000		
TOTAL VISITOR'S CENTER COST			$ 29,964,000		

APPENDICES INDEX

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CALIFORNIA STATE CAPITOL ANNEX PROJECT

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