MINNESOTA STATE CAPITOL

PREDESIGN STUDY

MIN0002

PREPARED FOR THE
DIVISION OF STATE BUILDING CONSTRUCTION
DEPARTMENT OF ADMINISTRATION
STATE OF MINNESOTA

June 2001

MILLER ▪ DUNWIDDIE ▪ ARCHITECTS ▪ INC

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PREPARED BY:

MILLER ▪ DUNWIDDIE ▪ ASSOCIATES, ▪INC.
ARCHITECTS
123 North Third Street, Suite 104
Minneapolis, Minnesota 55401
Commission # MIN0002

LUNDQUIST, KILLEEN, POTVIN & BENDER, INC.
MECHANICAL AND ELECTRICAL ENGINEERS
1935 W. County Road B2, Suite 300
St. Paul, Minnesota 55113

ELERT & ASSOCIATES
INFORMATION TECHNOLOGIES CONSULTANTS
140 Third Street South
Stillwater, Minnesota 55082

ELEVATOR ADVISORY GROUP
ELEVATOR CONSULTANT
289 East 5th Street, Suite LL101
St. Paul, MN 55101

June 2001

After review of the Capitol Predesign Study by the Department of State Building Construction and the Real Estate Management Division, the following changes have been made:

- The Square Foot Analysis Existing Areas has been revised. The square footage for the Governor's office space in the basement has been corrected. This has also changed the totals. Revised sheets E-2, E-3 and E-4 are attached.

- The Tenant Relocation plans have revised. The proposed tenant location plans have had the remaining tenant locations keyed. The proposed locations have not changed. Revised sheets B-b, G-b, 1-b, 2-b, 3-b and 4-b are attached.

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Appendices

The purpose of this project is to preserve the historic resource of the Minnesota State Capitol, to better utilize the tenant space in the Capitol, and to better facilitate the interaction between the public citizens of Minnesota and their state government for the next ten years. All work at the Capitol shall be respectful of the historic and architectural character and integrity of the Capitol and care shall be taken to retain and preserve the original fabric of the building. The criteria for determining the appropriateness of any proposed work shall be the Secretary of the Interior's *Standards for Rehabilitation.*

Based on the information gathered in this study, the Capitol building does not contain sufficient space to adequately support the needs of the public and the current tenants. The most notable shortcoming of the Capitol is the public hearing rooms, which lack necessary quantity, size and technology. Expansion space, adjacent to the Capitol, is needed to provide public hearing rooms and relocated office space. Approximately 91,200 gross square feet are needed for hearing rooms and 70,000 gross square feet for offices. The relocation and expansion of the public hearing rooms, and the new office space will allow the Capitol rehabilitation to better meet the needs of the public and tenants who use the building.

There are two alternates for this expansion space: to remodel existing space on the Capitol complex, or to build a new facility on the Capitol complex. If space is reused on the Capitolcomplex, this will create a "domino effect", requiring another group to relocate to provide the expansion space. This alternate is estimated to cost $72.6 million in construction, not including rent for an additional 161,200 sq. ft, or moving costs. If a new facility is built, the construction project is estimated to cost about $80.8 million. Depending on the alternate selected, this is estimated to take between four to five years to complete after the funding is in place. The expansion space needs to be provided before the work at the Capitol can proceed. In addition to expansion space, about 50,00 sq. ft. of swing space will also be needed for temporary offices during the Capitol construction.

The public and ceremonial spaces in the Capitol, which have not yet been restored, will then be restored; the tenant spaces will be rehabilitated to better fit the team working environment; and the building infrastructure (mechanical, electrical, technology, fire and life safety systems) will be upgraded. The restoration and rehabilitation work at the Capitol will proceed in three phases by wing, starting in the east wing, continuing in the west wing, and finishing in the north wing and center of the building. During the construction, each wing will be vacated (and the tenants moved to swing space) so that the work can proceed independent of the legislative schedule. The Capitol construction is estimated to take 5 ½ years and cost around $53 million to complete. The previous work at the Capitol has spanned 17 years and cost approximately $28 million.

Combined, the expansion space construction and the Capitol construction are estimated to take between ten and eleven years to complete.

CAPITOL BACKGROUND

Original Construction

The current Minnesota State Capitol, designed by Cass Gilbert, is the third Minnesota Capitol building. At the time of its completion in 1905, the building housed the entire state government from the Railroad Commission and the Minnesota Historical Society to the Governor, the Senate, the House and the Supreme Court.

Historic Designation

In 1972, the Minnesota State Capitol was placed on the National Register of Historic Places.

Previous Studies

In 1984, Miller-Dunwiddie-Associates was retained by the Capitol Area Architectural and Planning Board (CAAPB) to prepare a study of the public and ceremonial spaces of the Minnesota State Capitol Building. This report, *Minnesota State Capitol: a Preservation and Planning Study for Public and Ceremonial Areas*, was the first step toward an inventory the historic characteristics of the building and the first step toward a comprehensive preservation plan.

In 1988, Miller-Dunwiddie-Associates, again under the direction of the CAAPB, prepared the report: *Minnesota State Capitol: A Comprehensive Preservation Plan and Implementation Strategy*. This report provided a complete inventory of the historic materials in the building, reviewed the architectural, structural, mechanical and electrical systems, and laid out a strategy for implementation and completion of the restoration work by 1994. This plan has been the basis for the work that has been completed at the Capitol between then and now, however, a large portion of the restoration work has yet to be completed.

There have been several reasons for the delay of the Capitol restoration work.

First, there has not been adequate temporary (swing) space available to move people out during construction. This lack of swing space has made it necessary to complete the work in short phases during the interim between legislative sessions. Those who work all year in the building have had to deal with noise, dust, and disruptions during the construction.

Second, the building restoration work has received limited funding.

Third, the over all shortage of office space has required the use of some of the historically ceremonial spaces as office space. The best example of this is the east wing of the ground floor.

Reasons for this Predesign Study

It, therefore, became clear that the restoration and renovation schedule and master plan needed to be reviewed. The previous studies carefully reviewed the historical, structural, mechanical and electrical issues in the building. They did not attempt to review the needs of the building users.

In 2000, the Capitol Area Architectural and Planning Board submitted the capital budget request for this report. The resulting appropriation (Laws of 2000, Chpt. 492, Sec. 12, Subd. 10) was "to predesign the phased restoration of remaining areas in the Capitol." In order to do this, it was necessary to first understand how the building is used by the public and the tenants. This predesign, as all other state predesign projects, follows the predesign requirements set forth in the *Predesign Manual for Capital Request Projects* by the Department of Administration.

The scope of this predesign is to:

1. Review the needs of the building users.
2. Evaluate how the building can meet those needs, both now and in the next ten years.
3. Determine how the needs of the tenants can be better met.
4. Propose a plan for the restoration of the remaining areas of the Capitol.
5. Estimate the time and cost for the completion of the work.

Statutory Requirements

This predesign is unique because it involves many diverse tenant groups. It is also unique because this predesign project came to the tenants from the Department of Administration.

Most of the tenants of the Capitol have been located in the building since the building was completed in 1905. This would include the House of Representatives, the Senate, the Governor, the Supreme Court, the Attorney General and the Minnesota Historical Society.

The Governor's office is the only original tenant that retains all of its offices in the Capitol. Most of the House of Representative offices and some of the Senate offices are in the State Office Building. All of the Supreme Court offices are in the Judicial Center. Most of the Attorney General's offices are in the Park Building and the NCL Tower. Most of the MHS offices and archives are located at the Minnesota History Center. Capitol Security, although not an original building tenant, has most of their offices in a newly remodeled space in the basement.

The MHS is "responsible for the interpretation of the public areas for visitors to the capitol." (MN Statutes, section 138.69). In order to provide this interpretation, the MHS maintains a site office at the Capitol.

Additional information regarding each tenant's statutory requirements are included in the Tenant Summaries in Appendix C.

Operational Program

The operational program of each tenant is derived from the statutory requirements of the state. The operational program is the purpose and requirements of a state office or agency. The statutory requirements and description of the tenants are included in the tenant summaries in Appendix C.

The responsibilities of the State government have grown and continue to grow. There are several reasons for this:

- The State has grown in population.
- The State administrates more programs from the Federal Government.
- Local government and the public request the State to take on more responsibility and provide additional assistance and programs.

This increased amount of work has affected all of the Capitol tenants either directly or indirectly. The groups most affected by this are the Legislature and the Governor. The Legislature had 6,185 bills introduced in the 1995-96 biennium and 8,016 bills introduced in the 1999-2000 biennium: an increase of almost 30%.

The Capitol has also seen an increase in the number of public visitors. The number of people attending public legislative hearings has increased. The increased access to the legislature, via the television broadcasts and the internet, has sparked more interest in the legislative process. Also, several controversial issues have sparked additional interest. Approximately 130 to 160 thousand people visit the Capitol each year for events and meetings.

There has also been an increase in the number of tourists visiting the Capitol. The Minnesota Historical Society estimates that there are 60 to 70 thousand student visitors per year and another 60 to 70 thousand other tourists. These numbers are expected to continue to increase, especially after the completion of the historic restoration.

The Capitol building has been outgrown many times before. The original design allowed for some expansion space in the building, but this space was assigned to tenants even before the building was completed. The original building housed all of the state offices from the Legislature, Supreme Court and Governor to the Board of Health, the Adjunct General and the Rail Road Commission.

The basement was excavated to provide additional room in 1936. Other buildings have been built on the Capitol Complex to provide expansion space from the Capitol. All of the buildings now on the Capitol Complex are occupied by state offices that were originally located in the Capitol.

Needs Analysis and Planning Process

Those Involved

The state appropriation required the commissioner of administration to "...appoint a restoration advisory committee, which must include any members or employees of the senate named by the chair of the committee on rules and administration, to advise the commissioner on the expenditure of this appropriation." Because of the complexity of the project and the large number of people who needed to be involved, three groups were set up to review, guide and facilitate the predesign process.

- A **steering group** guided the procedure of the predesign process and was made up of staff from:
  - Department of Administration
  - Division of State Building Construction
  - Capitol Area Architectural and Planning Board

- An **advisory group**, per the appropriation requirements, reviewed and verified the predesign findings and recommendations, including prioritizing the work and helping define the needs for the public spaces. It was made up of representatives from:
  - Governor's Office
  - Senate
  - House of Representatives
  - Minnesota Historical Society
  - Capitol Area Architectural and Planning Board
  - Department of Administration
    - Division of State Building Construction
    - Plant Management Division
  - Department of Finance

- A **tenants' group** was asked to serve as the contacts for gathering information from the individual tenant groups. The focus of meetings with the group was explaining the process and informing them of the progress. It was made up of representatives from:
  - Attorney General's Executive Office
  - Capitol Café
  - Capitol Security
  - Council on Disability
  - Governor's Office
  - House of Representatives
  - Minnesota Historical Society
  - Plant Management Division
  - Press Corps
  - Senate
  - State Services for the Blind
  - Supreme Court
  - Real Estate Management Division
  - Capitol Area Architectural and Planning Board

Gathering of the Information

The information on the tenant needs was gathered from the tenants by surveys, interviews, and from site visits to the workspaces. The information was then put into a spreadsheets and summary for each tenant. These were then given to the tenants for review and comment. The spreadsheets and summaries were then revised to incorporate the comments for the tenants. The Tenant Needs Summaries and Spreadsheets are attached in Appendix C.

The information on the public needs was gathered from discussions with the tenants, the Minnesota Historical Society, the Plant Management Division, and the advisory group. The spaces were also visually inspected, and the previous studies and restoration work at the Capitol were reviewed. The Public Needs Summaries and Spreadsheets are attached in Appendix B.

Reviewing the Information

From the surveys, interviews and visits with the tenants, a list of potential projects was generated. This list was presented to the Advisory Group for their review and prioritization. From this list, some preliminary recommendations were presented to the Advisory Group.

We then meet with the tenants groups that will be most effected by the Capitol restoration – the House, the Senate, the Governor's office, the Supreme Court, the Attorney General and the Minnesota Historical Society. We reviewed with them the list of potential projects and the preliminary recommendations.

Based on these discussions, the recommendations were revised and presented to the Advisory Group as a draft presentation. The draft presentation was generally accepted by the Advisory Group.

The draft presentation was then presented to the Commissioner of Administration, the Governor's office, the Commissioner of Finance and the Senate Committee on Rules and Administration. A presentation to the House leadership will be scheduled following the close of the 2001 session.

Additional revisions have been made to the recommendations, based on the comments from these presentations and comments from the Steering Group.

Alternates Considered

After the initial information gathering, the Advisory Group asked that two alternate approaches be reviewed. The first approach was to review how the existing tenant needs could be met in the Capitol. The second approach was to review how the Capitol might best be used if some of the existing tenants would leave the building.

After further review, it became apparent that the Capitol cannot meet the needs for public hearing spaces or the needs of all the office tenants. Large hearing rooms are needed to accommodate the public, but there is not a practical, feasible way to provide these large rooms in the Capitol. This is due to the short beam spans and the large number of columns in the building. There is a need for additional office space and small meeting rooms within the office areas. There is not adequate expansion space in the Capitol to provide these office and meeting spaces. The east wing ground floor public corridor is currently being used as office space. For fire safety and historic reasons, this space needs to be returned to a public corridor. MHS has identified a need for a visitor's center to assist in the interpretation of the building and to better serve the visitors.

Because there is not enough space in the Capitol to meet the tenant needs, additional space needs to be found for some of the tenants outside of the Capitol. There are two possibilities for this expansion space.

The first alternate is to find existing space on the Capitol Complex. Because there is no vacant space on the Capitol Complex, this will require the relocation of some other Capitol Complex tenants into space off of the Complex. Additional lease space would need to be found for them.

The second alternate is to build a new building on the Capitol Complex. *The Comprehensive Plan for the Minnesota State Capitol Area* identifies Capitol Complex potential development sites. The site closest to the Capitol, and therefore the most desirable to current Capitol tenants, is the block to the northwest of the Capitol, which is now parking lot "B".

It is beyond the scope of this predesign to determine which of these alternates is the best solution. A separate predesign, which reviews the other needs for space on the Capitol Complex, is needed. Some preliminary information and costs for these alternates are included in Appendix G.

BUDGET

Previous work at the state Capitol has cost approximately $28 million.

Before the preservation and remodeling can proceed, both expansion space and swing space need to be provided. Preliminary costs for the expansion space are included in Appendix G. The estimated cost for 50,000 square feet of swing space is $6 million for the initial construction. The cost of remodeling the swing space between phases is included in the Capitol construction budget.

Minnesota Capitol Restoration and Rehabilitation Budget

Phase	Area	Cost (2001 dollars)
East Wing	122,677 sq. ft.	$20,245,758
West Wing	118,634 sq. ft.	$14,531,202
North & Center	103,937 sq. ft.	$18,363,109
Total		**$53,140,069**

Any changes to the phasing of the project will adversely affect the cost of the overall project.

COST HISTORIES

The Minnesota State Capitol restoration project total (previous and future work) is approximately $81 million. This number does not include the expansion space or historic furnishings. The following table shows several other states' capitol restoration projects.

Comparison of Other State Capitol Restoration Projects

State	Time	Cost	Phasing	Comments
Texas*	3 years (including addition)	$ 192 mil.	building closed	$187 mil. state appropriation, $5 mil. private donations
Wisconsin†	12 years	$ 143 mil.	wing by wing	Included historic furnishings
Kansas‡	9 years	$ 138 mil.	4 phases	
Nebraska§	9 years	not available	not available	$ 20.6 mil. for first phase (exterior)

* State Preservation Board, *Texas Capitol Preservation and Extension Project*, n.d., <http://www.tspb.state.tx.us/tspb/spbg/projects/capext.htm> (November 30, 2000)
† Sarah Wyatt, "Capitol Fix-up Nearly Done", *The Capital Times*, June 4, 2001.
‡, *Kansas State Capitol Renovation,* Kansas State Historical Society, 2000, <http://www.kshs.org/places/capren.htm> (December 27, 2000)
§ *Nebraska State Capitol Virtual Tour*, March 26, 1998, <http://www.nol.org/captour/restore1.htm> (December 13, 2000)

Comparisons of Other MN State Capitol Complex Projects**

Building	Area	Schedule	Cost††	Phasing	Comments
New Revenue Building	396,000 GSF office + 326,700 GSF parking	17 mo., design-build, completed Nov. 1998	$85.8 mil.	N/A	Steel frame, precast conc. panels & composite deck, 252,000 SF of raised access floors
Remodel of Transportation Building	276,234 GSF basement to 4th floor, 101,400 GSF 5th to 8th floor	1993 to 1999	$19.6 mil for basement to 4th floor, costs not available for 5th to 8th floor	8 phases	Extensive interior remodeling, no exterior work.
New Retirement Building	146,518 GSF office + 141,900 GSF parking	16 mo., design-build, completion in Sept. 2001	About $30 mil.	N/A	Steel frame, precast conc. panels & composite deck
Addition and Remodel of Judicial Center	242,433 GSF addition, 85,022 GSF remodel	24 months for addition, 14 months for remodel	$32.5 mil. addition, $13.9 mil. remodel	2 phases	Includes data, communications, electronic media, furniture & signage

OPERATING BUDGETS IMPACT

The tenants of the Capitol have not shared their operating budget information with us. Therefore, it is not possible to predict all of the impacts that this project may have on those budgets. The moving costs are likely to be a major part of the operating budget impacts.

Moving costs vary greatly because of differences in equipment and technology requirements. The following estimates are average expected costs. Tenants, with large amounts of specialized equipment and/or technology requirements, can expect to have higher moving costs. The tenants likely to have the largest moving costs would include the Senate Information Systems, Senate Media Services and House TV. All of these tenants are expected to move once – from the Capitol to the expansion space.

** Information was provided by the Minnesota Department of Administration, Division of State Building Construction.

†† All costs are adjusted to 2001 costs. Costs from 1997 on are adjusted according to the Department of Finance Inflation Factor Table, found in Appendix D of the *Predesign Manual for Capital Budget Projects*. Costs before 1997 are adjusted according to the *RSMeans Square Foot Costs, 22nd Annual Addition, 2001.*

The tenants that are relocated to the expansion space, and the Senators and Senate staff that are moving from the State Office Building to the Capitol, will all be moving once. Most of the other tenants will be moving twice – once from the Capitol to the swing space and then from the swing space back to the Capitol.

Moving Costs

The following costs were provided by Beltmann North American All costs are in 2001 dollars.

From Capitol to Expansion space	$105,284
Off of Capitol Complex (alternate 1 only)	$105,284
East Wing, from & to Capitol	$76,842
West Wing, from & to Capitol	$119,303
North Wing, from & to Capitol	$65,453

ONGOING IMPACT ON OPERATING BUDGETS

Most predesign projects are initiated by a state agency. This predesign was initiated by the Department of Administration for the entire Capitol building and all of the tenants in it. This includes many diverse groups.

The tenants have not shared with us their current operating budgets. Therefore, we can not predict the impact that this project would have on those budgets.

SCHEDULE

There are two types of space that need to be provided outside of the Capitol building. First, permanent expansion space is needed. Second, temporary swing space is needed for the Capitol tenants during the construction at the Capitol.

The first step will be to conduct a predesign study to determine which alternate will be the best solution.

Alternate 1 The first alternate for expansion space would involve moving some tenants of the Capitol Complex into other space off of the Capitol Complex. This space will need to be prepared for these tenants before they move.

The Capitol complex space, that they relocated from, will then need to be remodeled for the Capitol tenants who will be moving in.

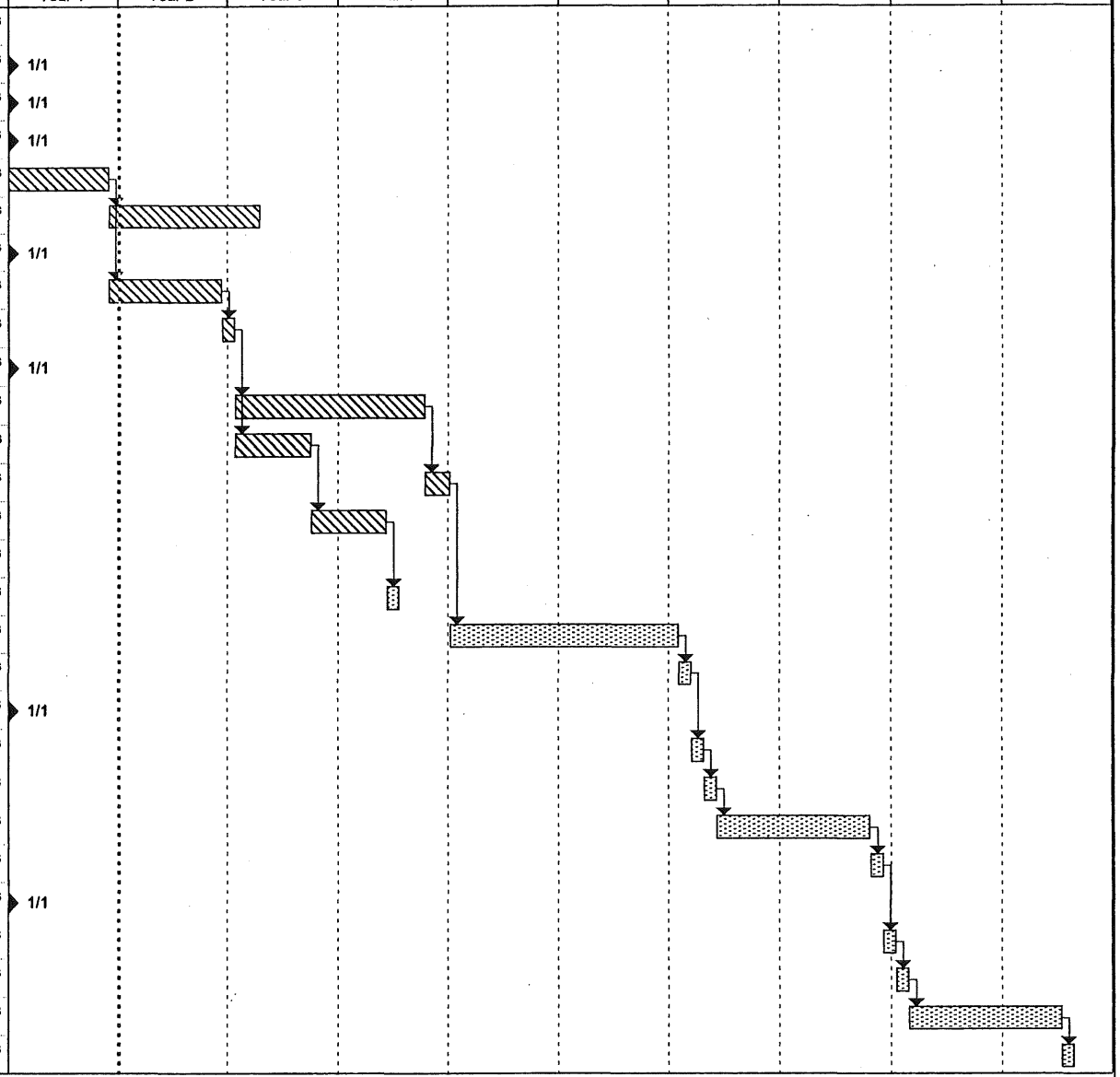
Alternate 2 The second alternate is to build a new building on the Capitol Complex. This new building will need to be completed before the work can proceed at the Capitol.

For more details on these alternates see Appendix G.

Swing Space Swing space will also need to be found near the Capitol and prepared for the tenants of the East wing of the Capitol. After the completion on the east wing construction, the swing space will need to be prepared for the west wing tenants. Similarly, after completion of the west wing construction, the swing space will need to be prepared for the north wing tenants.

Minnesota State Capitol Predesign
Alternate #1 - Use of Capitol Complex

ID	Task Name	Duration
1	**PRE-CAPITOL CONSTRUCTION REQUIREMENTS**	0 days
2	Funding of Relocation Pre-Design	0 days
3	Funding for Swing Space	0 days
4	Funding of Capitol Restoration Design	0 days
5	Pre-Design for Relocation Space	240 days
6	Design of Capitol Restoration	360 days
7	Funding for Remodeling/Relocating	0 days
8	Remodel Space for Tenants from Capitol Complex	270 days
9	Move Tenants from Capitol Complex	30 days
10	Funding of East Wing Construction	0 days
11	Remodeling of Vacated Space on Capitol Complex	450 days
12	Find/Design Swing Space (50,000sf)	180 days
13	Move Capitol tenants to space on Capitol Complex	60 days
14	Build out swing space	180 days
15	**CAPITOL CONSTRUCTION**	0 days
16	Move East wing tenants to swing space	30 days
17	Restoration of East Wing (Capitol Construction Phase I)	540 days
18	Move east wing tenants back to east wing	30 days
19	Funding of west wing construction	0 days
20	Remodeling swing space for west wing tenants	30 days
21	Move west wing tenants to swing space	30 days
22	Restoration of west wing (Capitol construction phase II)	360 days
23	Move west wing tenants back to the west wing	30 days
24	Funding of north wing / rotunda	0 days
25	Remodeling of swing space for north wing tenants	30 days
26	Move north wing tenants to swing space	30 days
27	Restoration of north wing / rotunda (Capitol construction phase III)	360 days
28	Move north wing tenants back to north wing	30 days

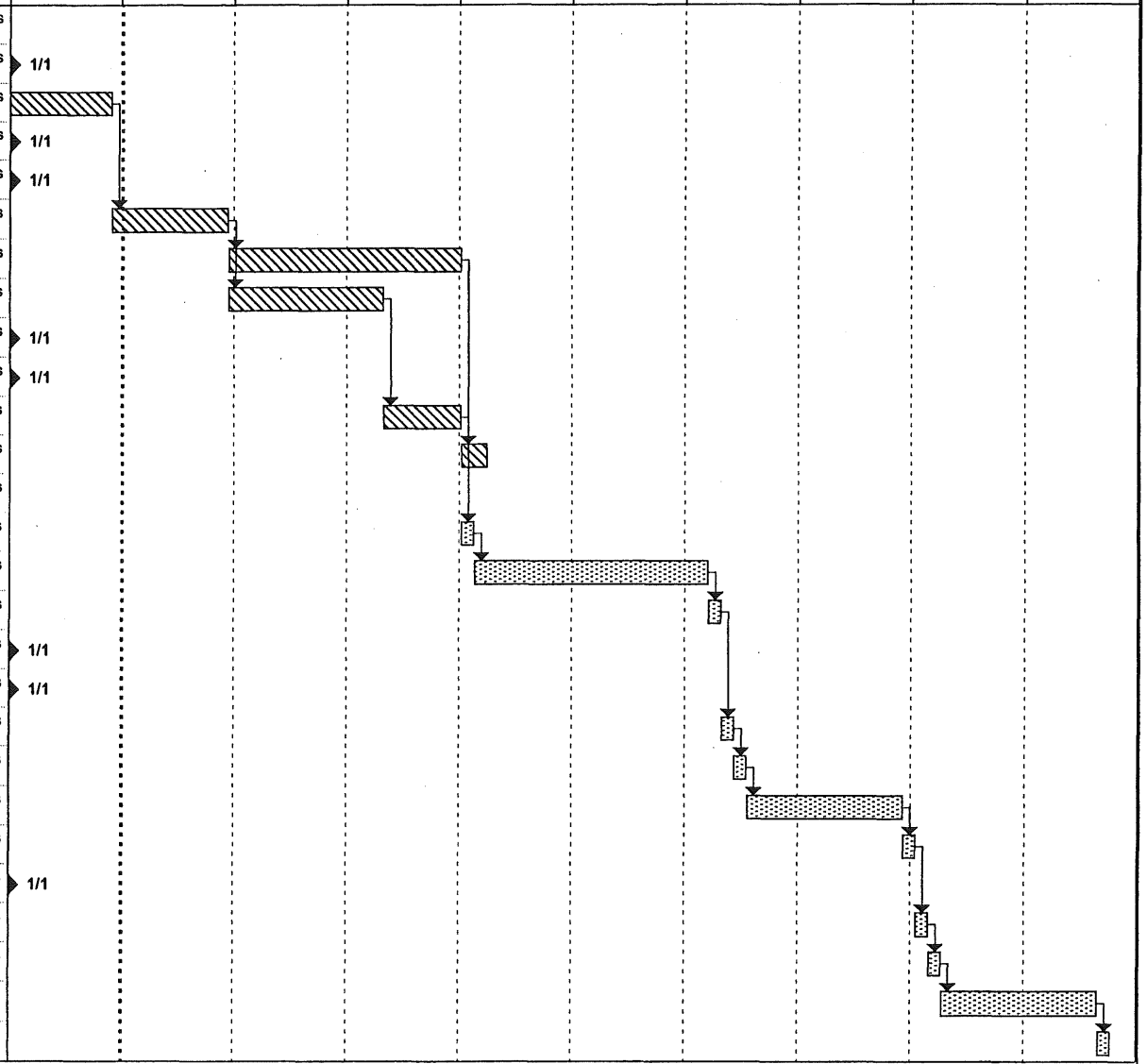


Project: MSC Pre-Design
Project No: MIN0002
Date: June 21, 2001

Task
Split
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Split
Rolled Up Milestone
Rolled Up Progress
External Tasks
Project Summary

Minnesota State Capitol Predesign Study
Alternate #2 - New Building

ID	Task Name	Duration
1	**PRE-CAPITOL CONSTRUCTION REQUIREMENTS**	0 days
2	Funding of Pre-Design	0 days
3	Pre-Design for Relocation Space	240 days
4	Funding for New Building	0 days
5	Funding of Capitol Restoration	0 days
6	Design of New Building	270 days
7	Construction of New Building	540 days
8	Design of Capitol Restoration	360 days
9	Funding of Swing Space Build Out	0 days
10	Funding of East Wing Construction	0 days
11	Build out swing space	180 days
12	Relocate Capitol tenants to new building	60 days
13	**CAPITOL CONSTRUCTION**	0 days
14	Move East wing tenants to swing space (in new building)	30 days
15	Restoration of East Wing (Capitol Construction Phase I)	540 days
16	Move east wing tenants back into east wing	30 days
17	Funding of Swing Space Design	0 days
18	Funding of west wing construction	0 days
19	Remodeling of swing space as required for west wing tenants	30 days
20	Move west wing tenants to swing space	30 days
21	Restoration of West Wing (Capitol Construction Phase 2)	360 days
22	Move west wing tenants back to west wing	30 days
23	Funding of swing space design	0 days
24	Remodel swing space for north wing tenants	30 days
25	Move north wing tenants to swing space	30 days
26	Restoration of north wing / rotunda (Capitol construction phase III)	360 days
27	Move north wing tenants back into north wing	30 days



Project: MSC Pre-Design
Project No: MIN0002
Date: June 21, 2001

Task | Milestone | Rolled Up Split | External Tasks
Split | Summary | Rolled Up Milestone | Project Summary
Progress | Rolled Up Task | Rolled Up Progress

PAST USE

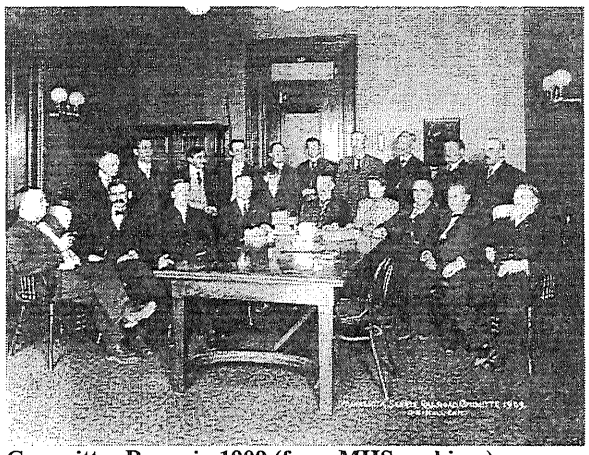
Original Use of the Capitol

The Capitol building originally housed most of the State government. The public interaction in the government happened at the galleries of the Senate, House of Representatives and Supreme Court Chambers.

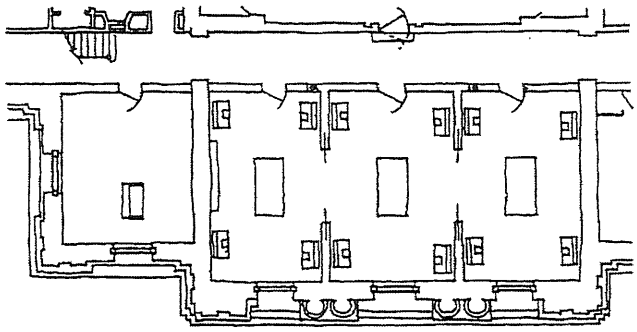
The building was designed to be primarily an office building. Because it was economical, the structure was designed with short-span beams and frequent columns, which were mostly hidden within the many office walls.

Legislative Offices

Originally the legislature worked primarily from their desks in the chambers. Committee rooms were located near the Senate Chamber: the House on the north and the Senate on the south. The committee rooms contained both conference and staff office space. Historically the Legislators had a smaller workload and that was reflected in fewer legislative staff, who were shared by several members. The public interacted with the legislature from the galleries within the Chambers.



Committee Room in 1909 (from MHS archives)

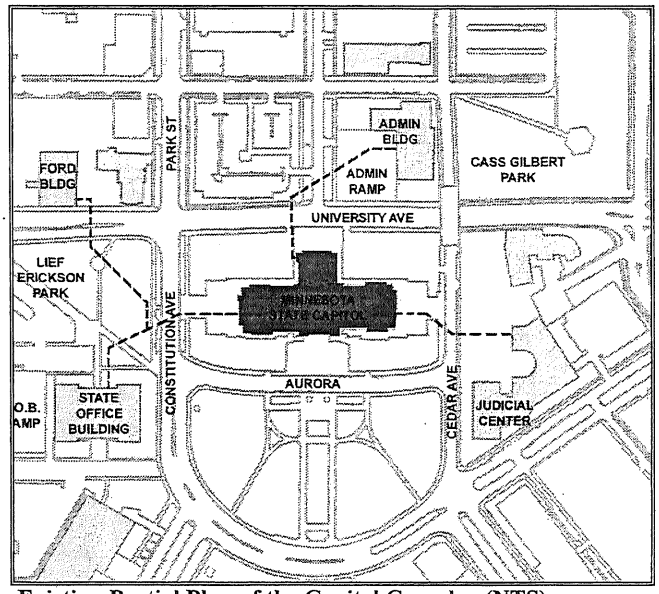


Past Layout of Committee Rooms (NTS)

Past Expansion

The originally designed expansion space within the building was utilized even before the building was completed. In 1936, additional space was created in the building by excavating the basement.

Since the Capitol opened, many of the original tenants have relocated to new buildings, that were built on the Capitol Complex and other buildings that were either built or leased around the metropolitan area. For examples, the Judicial Branch moved most of its functions to the Judicial Center; the Secretary of State, some of the legislative offices and some hearing rooms have moved to the State Office Building. Tunnels were built between the buildings on the Capitol Complex for utilities and pedestrian traffic.



Existing Partial Plan of the Capitol Complex (NTS)

PRESENT USE

Remodeling of Spaces

Over the years, the layout of the building has been altered to meet the needs of the tenants. These changes have included:

- Creating hearing and meeting rooms by combining multiple office spaces (all with remaining columns).
- Reconfiguring of single offices into office suites.
- Adding offices in spaces that were historically public spaces.
- Adding offices in basement storage areas.

Current Tenants of the Capitol Building

The Capitol Building currently houses only a portion of the State government, including:

Tenant	Capitol Area	Notes
Senate	84,940 sq. ft.	Also has 20,321 sq. ft. in the State Office Building.
House	29,971 sq. ft.	All of Representative's offices and most of the staff offices are located in 155,883 sq. ft. in the State Office Building.
Governor	9,265 sq. ft.	The Governor's office is the only tenant that still has all of its offices at the Capitol.
Attorney General	5,405 sq. ft.	Only the executive offices (22 staff) are located in the Capitol. Most of the other staff (about 400) are located in the Park Building and the NCL Tower in downtown St. Paul.
Judicial	3,835 sq. ft.	All of the offices and most of the functions are located in the Judicial Center. The space in the Capitol is retained only for Supreme Court sessions.

Changes in the Legislative Process

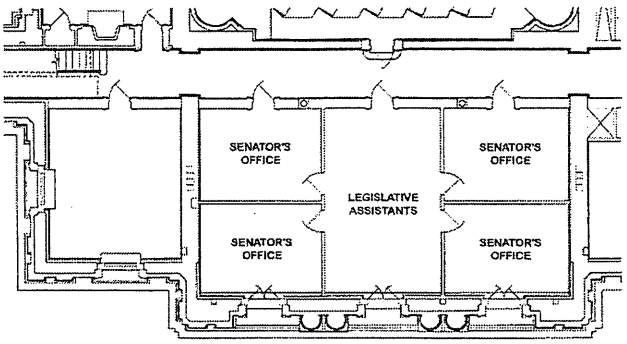
The changes in the legislative process have required changes in the spaces used by the Legislature. Some of the key changes that have happened include:

Past	Present
Legislation crafted on the floors of the chambers.	Legislation is crafted in public hearings.
The public interacted with the legislature primarily from the galleries of the chambers.	Public interacts with the legislature primarily in public hearings.
The number of committees and public hearings has fluctuated, but has generally increased over time.	The number of public attending hearings has increased.
The legislature used to share office spaces.	It is now necessary for them to have private offices to conduct their business.

Past	Present
Staff worked relatively independent of other staff and worked for more than one legislator or committee.	There are more staff and the staff work in teams. Each Legislator has a Legislative Assistant. Each committee has a Committee Assistant and there are more research staff.

Changes in Legislative Offices

Because of the need for more privacy, the offices have been reorganized into suites with private offices for the legislators. As, the number of staff has increased, some staff have been moved into the interior offices. The interior offices are not desirable as legislator offices. The current layout does not work well for teams of staff because there are not sufficient meeting and conference rooms adjacent to the offices.



Current Design Layout of Legislative Offices (NTS)

Public Hearing Rooms

Scheduling of Hearing Rooms

Hearing rooms are scheduled through the House and Senate Sergeants at Arms offices.

The standing committees are assigned regular meeting times and rooms. The hearing rooms are scheduled at least 8 am to 6 pm everyday during session and as many as 20 hours a day toward the end of the session. Between the Capitol and the State Office Building, there have been as many as 17 hearings scheduled during at the same time.

There are several types of meetings that occur in the hearing rooms. The legislature has standing committees, conference committees, caucus meetings and general office meetings. Because of the shortage of small meeting rooms in the offices, the hearing rooms are also used (when available) for job interviews, employee orientation, job training programs, staff meetings and meetings with guests and vendors.

During the interim, the hearing rooms are scheduled by state agencies, various groups from Washington, Minnesota's Senators and Representatives from the US Congress, and the other Capitol building tenants.

Size of Hearing Rooms

The largest hearing room in the Capitol is room G-15, which has room for 24 committee members and 141 audience members. Some of the committees now have 38 to 40 members.

The audiences, for controversial hearings, are also larger than any of the hearing rooms can accommodate. For example, when hearings in rooms 107 and 112 overflow, the hallway fills up with people trying to hear, to see and to be seen. The hallway then is blocked to anyone trying to exist through this area. This creates a safety concern, because the emergency exit is blocked.

Hearing rooms need to be able to accommodate 40 members and at least 150 to 175 audience members. At least a few hearing rooms are needed to accommodate 300 and at least one is needed to accommodate up to 600.

Configuration of Hearing Rooms

There are three major components of a hearing room: the committee table, the testimony table and the audience seating. Some hearing rooms also have a staff table for the legislative staff. Key staff people often sit at the committee table.

Most of the committee tables are either rectangular tables or U-shaped tables. The rectangular tables are more space efficient and the U-shaped tables work better for recording and presentations. A dais form for the committee would also work well for recording and presentations, and would work well for some of the larger committees, but not for the conference committees.

The testimony table is located opposite the committee chair and has room for two presenters. In the State Office Building, the controls of the presentation equipment are also located at the testimony tables.

The audience seating, in the Capitol hearing rooms, are movable chairs. The audience seating is divided into two areas: one for media and legislative staff, and the other for the general public. The hearing rooms in the State Office Building have stepped seating for the audience. This is preferable because it allows clear sight lines to the committee.

All of the Capitol hearing rooms have columns blocking the sight lines between the audience, committee and presenters. The columns also make it difficult for the audience to see the visual presentations.

In all of the Capitol building hearing rooms, there is not enough acoustical separation between the hearing rooms and the adjacent corridor and offices.

Technology in Hearing Rooms
Most of the hearing rooms are equipped with microphones in the tables and remotely control cameras for recording and broadcasting the hearings. Exterior windows and uneven lighting levels in the hearing rooms make video recording more difficult. Each hearing room also has separate audio recording.

Visual presentations in hearings use overhead projectors, videos, and projected computer images (like power point). One of the hearing rooms in the State Office Building has teleconference capabilities. Eventually, this will be needed in all of the hearing rooms.

Some of the hearing rooms have had internet connections added at the committee tables. There are not power outlets near these network connections, so the committee members must use the battery power for their laptops.

FUTURE NEEDS

Identified Needs

Public Hearing Rooms
More hearing rooms are needed. Larger hearing rooms are needed. More efficient hearing rooms are needed with clear sight lines and no columns. More technology is needed in the hearing rooms.

Meeting and Conference Rooms
Most office tenants are working in teams and have experienced an increase in the number of public visitors. This has created a need for more small (6 to 10 people) and intermediate size (10 to 20 people) meeting rooms. The amount of technology needed in these rooms varies by group. A minimum technology requirement would be one Internet connection and one phone line.

Restoration of Historic Spaces
Many of the spaces identified for restoration in the 1988 *Comprehensive Preservation Plan* have not been restored. (See Project Description – Capitol Building Improvements for list of

spaces.) These spaces need to be restored.

An interior maintenance manual should be prepared for the maintenance and continued preservation of the Capitol. An exterior maintenance manual was produced as part of the previous work at the Capitol.

Visitor Services
The building currently has very limited services for the hundreds of thousands of visitors that come to the Capitol building each year. The current information desk: is not ADA accessible, detracts from the historic character of the space, is ergonomically poor and is the worse for wear. There is limited space to gather groups for orientation before tours. There is a need for coat check or lockers and other services like ATM's and a gift shop.

Secure Parking for Public and Staff
The visitors to the Capitol currently must park in the metered lots or the metered spaces along the streets. They then often have to walk several blocks to the building. Because there are limited metered spaces, it is difficult to find an available space during busy times.

Many of the staff have to park in remote parking lots. Because of the late hours of the legislature, the staff often has to walk to their cars late at night. Several tenant groups have identified this as a safety concern. The distance to parking is also an efficiency problem for staff that need to run errands during the day.

Majority and Minority Senators in Same Building
Currently the majority Senators have offices in the Capitol and the minority Senators have offices in the State Office Building. This creates an undesired hierarchy of offices. To avoid this and to help facilitate the interaction between the majority and minority, all Senator's offices should be located in the same building. Also, the offices should be, as much as possible, standardized in size.

Loading Dock and Service Access Improvements
The current freight elevator is too small to transport a standard size pallet. Therefore, many of the deliveries to the building come in at the ground floor. This is disruptive to the hearings and the offices on this floor. The delivery trucks often sit idling near the fresh air intakes. There is also a desire to keep the delivery vehicles further from the building in order to increase the security of the Capitol.

Several tenants have identified a need for a receiving area in which they could temporarily store large shipments of supplies,

equipment and furniture. This would be a shared area near a loading dock that would be divided into secure areas.

Building Code and Accessibility Needs
The signage throughout the building does not meet the ADA Accessibility Guidelines or the MN State Building Code.

The emergency exiting from the building does not meet the exiting requirements of the building code. The areas with the worst exiting problems are the third and fourth floor of the north wing and the ground floor and third floor of the east wing.

HVAC and Plumbing Needs
The HVAC systems do not provide the required number of fresh air exchanges. The fresh air intakes are being contaminated by motor vehicle exhaust on the north side of the building. Many of the existing mechanical units are near the end of their useful life.

The number of toilet fixtures is far below the number required by the state building code.

Electrical Needs
The main electrical service to the building cannot meet the increasing electrical demands of the building. The main electrical transformers for the building are near the end of their useful life and are scheduled for replacement in the fall of 2001. The main panels for the building also need to be replaced. The electrical distribution system does not meet the needs of the building users (for examples: not enough outlets for computers and other equipment, power is unavailable in some areas that it is needed).

Building Technology Needs
The cabling and technology backbone of the building is not adequate to keep up with changing technology requirements. There are many abandoned data, cable and phone lines in the building, which need to be removed.

Capitol Cannot Meet Needs

The Capitol building cannot meet all of the needs of the building tenants and visitors. The two main areas in which the building is insufficient are: the hearing rooms and the lack of expansion space.

Hearing Rooms
It is not economically feasible to create large, column free spaces in the Capitol building. It is difficult to add the technology requirements of the hearing rooms to the existing historic fabric of the building. It is difficult to provide the required exiting from

these assembly spaces. The spaces now used as hearing rooms were designed as offices and work more effectively as offices, than as hearing rooms.

Expansion Space.
There are currently only two small areas of the basement that are not assigned as lease space. In the past several years, some of the basement storage areas have been converted into offices. This has created a shortage of storage space in the building. In some cases, the mechanical systems were not upgraded to handle the change in use. Other areas of the building, including hallways, offices and vestibules are being used for storage.

Although there are some areas of the building that could be used more efficiently, there is no expansion space in the building.

Prioritize Use of Capitol Building Space

Additional space, for offices and public hearing rooms, needs to be provided elsewhere. The hearing rooms need to be close to the Capitol building. The distance to the State Office Building has proven to be a workable distance. Therefore, the new hearing rooms should be no more than this distance away from the Capitol. Most of the staff support spaces, that can be located outside of the Capitol, must be located adjacent to the hearing rooms.

The Capitol building should then be remodeled to meet the remaining tenants needs and the historic spaces, that have not already been restored, should be restored.

CAPITOL BUILDING IMPROVEMENTS

Remodeling of Tenant Spaces

Reallocation of Tenant Spaces

In order to best utilize the spaces in the Capitol, we are proposing the reallocation of tenant spaces. Plans of the existing and proposed tenant space allocations are located in Appendix D. The existing and reallocated square footage analysis is found in Appendix E.

Expansion space will be provided either in an existing building on the Capitol Complex or in a new building in the Capitol Complex. Some current Capitol tenants will be moved to this expansion space.

The largest tenant relocation will involve the Senate. Most of the Senate support offices will be moved to the expansion space and the minority Senators will be moved into the Capitol. Former Senate staff spaces will be remodeled for Senator offices. Then, space in the State Office Building, which the Senate is moving from, will provide expansion space for the House.

The hearing rooms will be relocated to the expansion space. Some of the old hearing rooms will remain as meeting and conference rooms. Some will be remodeled into office suites.

House television will be moved from the Capitol to the expansion space and their old space used as additional House offices and meeting rooms. The House will have some office space in expansion space, but will primarily relocate and expand within the Capitol and State Office Building.

The current lobbyist space (provided by the House) will be moved from the Capitol to the expansion space. The old lobbyist space will then provide expanded office and meeting space for the House.

The press corps offices will also be moved from the Capitol to the expansion space. A new, shared press conference room will be provided in the expansion space, near the new press corps offices. The old main area of press offices will be remodeled for MHS site offices and the out state press offices will be restored to a dining and meeting space.

Some of the Governor's staff offices will be relocated from the basement to the ground floor space that is vacated by the Senate.

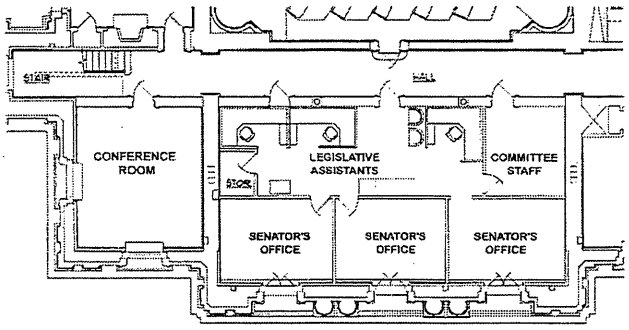
All of these moves will allow undersized offices and workstations to be enlarged to the Department of Administration standards.

The Rotunda space in the basement will be remodeled for a meeting and orientation space for the MHS visitor's center. The circular house stair will be extended into the basement. The basement corridor around the Rotunda will be opened for public circulation and a new corridor will be opened between the Rotunda and the Rathskeller.

Reconfiguration of Office Spaces

At this time only a portion of the existing offices will be remodeled. These will be the offices that are changing function (i.e. Senate support offices to Senator offices, or press offices to MHS offices). However, the other offices can be reconfigured in the future to better accommodate the tenants' needs.

Wherever possible, new office layouts should include conference and meeting space.



Possible Future Office Suite Layout (NTS)

Restoration of Historic Spaces

The rest of the public and ceremonial spaces, which have not yet been restored, will be restored as per the recommendations accepted in the *1988 Comprehensive Preservation Plan*. Key areas that still need restoration include:

General Restoration

- Public corridors
- Rotunda
- Elevators
- Grand Stairs
- Circular "House" stair

Basement Restoration

- Judicial Dining Room
- Governor's Dining Room

Ground Floor Restoration

- North Wing Corridor
- East Wing Corridor
- East Vestibule
- East Portico

First Floor Restoration

- Governor's Anteroom
- Governor's Reception Room
- Governor's Private Office
- Governor's "public office" or Conference Room
- Attorney General's Anteroom
- Information Desk

Second Floor Restoration

- Supreme Court Chamber
- Supreme Court Consultation Room
- East Wing Minor Corridors
- North wing Minor Corridors Ceilings

Third Floor Restoration

- East Wing Minor Corridors
- Rotunda Corridors
- Minor "bee-hive" Domes

ADA and Building Code Improvements

The Capitol, as an existing historic structure, cannot and is not required to meet the current building codes. However, efforts should be made to improve the life safety, accessibility and other code deficiencies wherever possible. In order to accomplish this, the building was reviewed for compliance with the current building codes, including:

- The Uniform Building Code (UBC), 1997 edition
- The Minnesota State Building Code (MSBC), 1999 edition
- The Minnesota Accessibility Code (Chapter 1341 of the MSBC), April 1999 edition
- The NFPA 101 Life Safety Code, 1996 edition

This was then reviewed with Tate Halverson, the Senior Plan Examiner at the City of Saint Paul. The following items were agreed upon in our meeting with the City.

At the time that the design and construction work at the Capitol goes forward, the code review should be update to all codes that are current at the time.

Non-compliant Code Items

- The walls of the public corridors are assumed to be equal to 1 hour rated construction. The doors to the public corridors not equal to 1 hour rated construction, however, they are allowed to remain.

- Exterior exit doors at the first floor main (south) entrance swing in. Because of space limitations, it is not possible to reconfigure the vestibules to chance the door swings. So, they are allowed to remain.

- Existing handrails and guardrails, at exterior and interior, will remain and will not be revised to meet height, spacing and configuration requirements. New handrails and guardrails, which are not replacing historic rails, will meet all current code requirements.

- The main grand stairs will not be enclosed, but will still be considered as exit stairs.

- The building is not yet fully fire sprinklered, but the allowable area increase for sprinklers has been taken to allow the building to not have any area separations.

- The existing historic elevator shafts will not have lobbies at the ground through third floors. The basement will have elevator lobbies added.

Previous Code Improvements

Fire Protection Improvements

- Where the building has been remodeled, fire sprinkler and smoke detection systems have been added to the meeting rooms and offices. Fire sprinklers have not been added to the public corridors and ceremonial spaces (i.e. chambers).

- An additional sprinkler head should be located near the corridor doors, to partially compensate for the non-rating of the doors.

- The secondary corridors are of 1 hour fire resistive construction.

- Exterior door swings were changed to swing out, except at the south entrances to the first floor.

Accessibility Improvements

- Toilet rooms have been altered to make them accessible.
- Accessible entrances and seating were provided to the floor and galleries of the House and Senate chambers.
- Door hardware is being replaced to meet the accessible requirements. (i.e. levers are replacing knobs, automatic door openers have been added to some doors, etc.)
- Accessible entrances and seating were provided in the cafeteria.
- Accessible entrances have been provided at the south port cochere and the north ground floor entrances.
- Accessible parking has been provided in lot N.

Recommended Code Improvements

Fire Protection Improvements

- Provide sprinkler system in non-public and non-ceremonial spaces.
- Install warning smoke detector system (in areas without detection).
- Add smoke gaskets to historic corridor doorways.

Elevator Improvements

- Add elevator lobbies at the basement level.

Exiting Improvements

- Provide rated doors at ground floor entrance to basement stairs, under grad stairs. This will separate the basement from the Rotunda.
- Open up basement corridors around the Rotunda, thereby eliminating the dead end corridor to the west elevators.
- Open up the east corridor, vestibule and portico on the ground floor. This will eliminate the dead end corridors around the east stair and it will allow proper exiting from the offices.
- Extend the secondary stairs on the north side of the west wing, and on the north and south sides of the east wing. Enclose

these stairs in a 2 hour fire rated enclosure. Provide 2 hour rated corridors from these stairs to the vestibules at ground level.

- Add stair from second to first floor at north wing.

- On the third floor, enclose secondary corridors at the north and south sides of the east wing with 1 hour rated enclosure

Accessibility Improvements

- Add limited use, limited access elevator from third to fourth floor of north wing, to make the fourth floor accessible.

- Replace signage with new signage that meets the ADA guidelines. Note: signage must also be responsive to the historic character of the building.

- Provide accessible toilets for both genders on every floor.

Plumbing Improvements

- Upgrade toilet rooms to meet minimum ADA standards and minimum fixture counts as required by the state building code.

HVAC Improvements

- The HVAC systems will be upgraded to meet the current code requirements, including requirements for air exchanges.

Electrical Improvements

- The electrical systems will be upgraded to meet the current code requirements.

Mechanical Improvements

(by LKPB, Inc.)

Summary of Mechanical Issues

Many of the mechanical systems serving the Capitol Building are inadequate to accommodate existing loads and do not comply with current codes, or are in deteriorating condition.

Typical mechanical systems within the Capitol include:

- Air handling units and fans
- Ductwork (supply, return, outside air, relief air, exhaust air)
- Heating system
- Cooling system
- Plumbing system
- Fire protection system

Cooling loads (especially) and heating loads (somewhat) have changed significantly during the last thirty years. The infusion of computers and electronic equipment has exploded. This puts an increased burden on the cooling systems of a building. In addition, code changes within this timeframe have dramatically changed. One significant change has been the increase in required outside air levels per building occupant. These changes, along with deterioration strictly due to age, require the aforementioned systems to be modified and/or replaced.

Because of the quantity of systems in place and the fact that the Capitol Building cannot be completely shut down, system replacement will need to be phased over time. The mechanical systems run vertically in each wing of the building. The primary phasing plan should include mechanical system modifications as part of overall space allocation changes planned for the building. Systems that are not directly associated with space allocation modifications should be done independently, and phased according to priority, as part of Capitol infrastructure upgrades.

Air Handling Systems

Currently there are twenty-eight (28) air handling units in operation in the State Capitol Building. The following table lists the units, location and the area served by each. The units with shading and bold typeface have the highest replacement priority.

All of theses units vary in age, condition, and capacity. Most of these units should be replaced because they are inadequate in cooling or heating capacity, inadequate in outside air quantity, and are in deteriorating condition. Obviously, the recently installed units (Cafeteria, Terraces, and Capitol Security projects) are in good condition and the only work that needs to be done is to ensure the proper quantity of outside air is actually reaching the units.

Unit #.	Location	Area Served
S-1	B36	Basement Center Area
S-1b	B33	Hearing Room G15
S-2	G21A	G21
S-3	B56	North Side of 2nd Floor East Wing and 219, 261, 221 North Side of 3rd Floor East Wing and 317A, 317B, 317C, 317D
S-4	B56	North Side of Ground Floor East Wing, North Side of 1st Floor East Wing
S-5	B55	South Side of Ground Floor East Wing, South Side of 1st Floor East Wing
S-5a	B55B	B42 area

Unit #.	Location	Area Served
S-6	B55	Supreme Court S260, South Side of 2nd Floor East Wing, South Side of 3rd Floor East Wing
S-7	B31	West Dome Corridor, Ground thru 3rd Floor
S-8	B42	East Dome Corridor, Ground thru 3rd Floor
S-9	B9	North Side of Ground Floor West Wing, North Side of 1st Floor West Wing
S-10	B9	North Side of 2nd Floor West Wing, North Side of 3rd Floor West Wing
S-11	B10	Rooms B12, B28 series, South Side of Ground Floor West Wing, South Side of 1st Floor West Wing
S-12	B10	South Side of 2nd Floor West Wing, South Side of 3rd Floor West Wing
S-13	406	404, 408
S-14	B9	New B5 Capitol Security Area
S-15	Behind B46D	B46 Area
S-16	B10J	B2 & B4 Area (old Capitol Security)
S-17	B71A	B66 series, B70C
S-18	Roof above 313A	House S270
S-19	Roof above 303	Senate S280
S-20	B71B	B71B
S-21	OA Plenum	New Cafeteria Area (B22 series, B24 series)
S-22	B25	Ground Floor North Wing, 1st Floor North Corridor FC 04
S-23	B25	1st Floor Hearing Room 107
S-24	B25	1st Floor Hearing Room 112
S-25	above House	House Skylights
S-26	B19A	Ground Floor Room 4

The most prudent method of replacing these units is to include the replacement as part of a remodeling project that occurs within the area served by the unit. If an air-handling unit serves an area that has no remodeling scheduled, the replacement will need to occur under the umbrella of an infrastructure upgrade.

Proper replacement of an air-handling system will mean not only replacing the air-handling unit itself, but also the outside air and relief air ductwork, the heating piping, and the cooling piping.

Outside Air System

There are several major concerns regarding the outside air system at the Capitol Building, namely:

- Quantity
- Quality

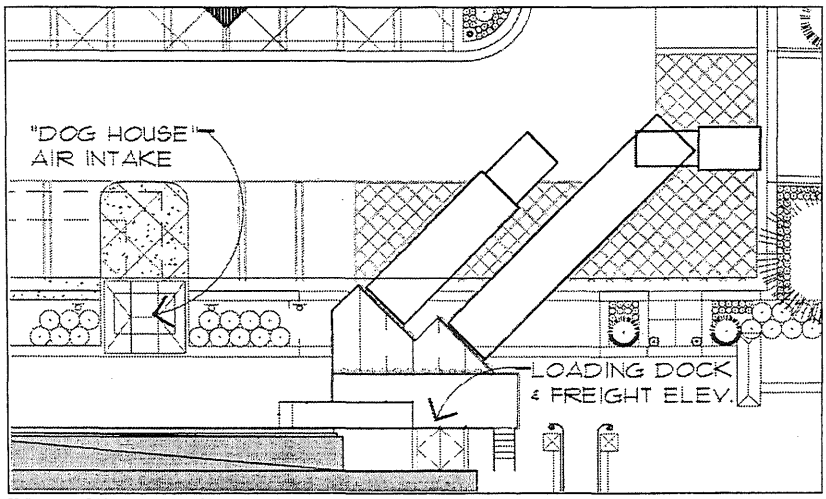
The locations for most of the outside air entering the Capitol are on the north and south sides of the building. On the north side, there are three "dog house" type structures that serve as outside air intakes. Outside air enters the structures on the sides and is routed to air plenums from which the air-handling units draw. Air is relieved from the north side of the building via shafts located near the center rotunda area.

On the south side of the building, the outside air intakes are different. On the west half of the south side, outside air enters the building through structures located on the terrace and is relieved through grilles on the face of the building, below the terrace level. This was the original design for the building. On the east half of the south side, the situation reverses. Outside air enters through grilles located on the face of the building and is exhausted through the doghouse structures on the terrace. This reversal was implemented as part of the recent southeast terrace project in an effort to increase the area of the outside air intakes. The southwest terrace project, which is scheduled for summer 2001, will make similar air intake and air exhaust changes to the southwest portion.

Outside Air Quality

The doghouse type structures used for outside air intakes on the north side of the building are adjacent to parking and drive areas. Exhaust fumes from vehicles easily enters the building. Having vehicle parking this close to outside air intake sources is in violation of current codes. According to code, outside air sources are prohibited from areas where objectionable odors, flammable vapors, or fumes can be picked up, and the intakes must be a minimum of ten feet above the surface of any adjacent public way or driveway. This scenario for outside air needs to be changed to comply with code and to improve the air quality.

On the south side of the building, there is no vehicle parking adjacent to the outside air intakes. This situation complies with code and does not have as serious a threat to indoor air quality as on the north side. On the west half of the south side, however, there is the potential for smoke from occupants who use the terrace as a smoking lounge to enter the building. Modifications will be made to duplicate what was done on the east half of the south side. This will be part of the southwest terrace project in summer 2001.



Plan of Loading Dock Area

Outside Air Quantity

The age of the air handling units in the Capitol Building varies greatly. Several units are quite new, having been installed as part of recent projects such as Capitol Security, North and South Terraces, and the Cafeteria remodeling. Outside air quantities specific to these projects and units is not an issue. Of greater concern is the outside air quantity being provided to most of the remainder of the air handling systems.

Building Air Balance and Air Pressure Relationship

Over the last thirty years, the code required minimum outside air quantity for building occupants in office type occupancies has changed drastically from five cubic feet per minute (CFM) per person to today's requirement of twenty CFM per person. The reason for this is largely due to occupant health concerns. This change in quantity dramatically affects the design of air handling systems. Obviously, outside air ducts sized for five CFM per person are significantly undersized to provide twenty CFM per person. In addition, outside air louvers, sized for reduced outside air volumes, are inadequate to accommodate the increase in air volume. There are consequences beyond just the outside air ductwork and intake louvers as well. Larger outside air quantities delivered by an air handling system creates a larger heating and cooling demand on the heating and cooling coil components of the air handling units. Coils sized for smaller quantities of outside air cannot meet the requirements of increased outside air; therefore, creating cold areas within the building in the winter and warm, humid areas in the summer. Furthermore, piping systems providing chilled water for summer cooling and hot water for winter heating to each air-handling unit become inadequate to deliver the greater flow required. It becomes quite obvious that a domino effect on mechanical systems is created by increasing the outside air quantities in an air-handling system.

The State Capitol building currently is experiencing a negative air pressure relationship relative to the outdoors. As a result, outside air is drawn into the building when outside doors are opened constantly around doors and windows, and through any little cracks in the building structure. This air drawn in is not tempered (i.e. heated, cooled, humidified, dehumidified, or filtered) in any way, unlike that which enters via an air handling system.

One consequence of the Capitol Building operating under a negative pressure is that cold air is drawn into the building in the winter, which causes drafts and increases the heating requirement. This is also true in the summer when warm, humid air is drawn into the building. This is contributing to the high humidity levels in the building which is causing bubbling of paint in various areas.

The solution to the negative air pressure problem is to balance the amount of outside air being drawn into the air-handling units with how much air is relieved and exhausted via the HVAC systems. It would be desirable to have a slight *positive* air pressure relationship, relative to the outside. In order to balance the intake and relief air, the amount of outside air drawn through the air handling units must be increased. Currently, the amount of air leaving the building through exhaust fans (such as toilet and general exhaust systems) is greater than what is drawn through the air handling units. The exhaust fans are pulling air from wherever possible, and the result is that whatever cannot be drawn in and tempered by the air-handling units is made up directly with outside air being drawn in via doors, etc.

In addition to increasing outside air quantities, in order to achieve proper air pressure relationship within the building, the relief/exhaust system must be properly balanced, also. Over time, as modifications to parts of systems occur as part of a small remodeling project, the entire building relief and exhaust systems become imbalanced. This needs to be corrected by properly determining required quantities of relief and exhaust air for the building and balancing the systems to achieve the required volumes. Existing exhaust fans will need to be replaced with new fans properly sized for the new conditions.

Heating System

The heating source for the Capitol Building is St. Paul District Energy. Heating water is piped into the building, circulated through heat exchangers located in the basement pump room, and returned to the District Energy Plant. The circulation system within the Capitol consists of main heating water pumps located in the basement pump room and numerous booster pumps scattered throughout the building.

The capacity of the heating system is adequate to serve the building, however the distribution system is not. There are several cold areas within the building. It seems whenever remodeling projects occur and additional heating is needed, booster pumps are added to accommodate the heating requirement of the particular project. Because re-balancing the entire heating system is not practical within the parameters and budget of the individual projects, the system becomes out of balance and areas outside the particular project become deficient in heating capacity. Basically, it's the "rob Peter to pay Paul" effect. The entire heating system needs to be balanced and several branch piping loops may need to be increased in size in order to properly deliver the required flow to each system.

No current schematic plan showing the entire heating water distribution system within the Capitol Building exists. The first step in balancing the system would be to document the existing conditions and create a system schematic. This schematic would show each air handling unit and heating coil on the system, the amount of flow required, in addition to the routing of the piping loops and sizes of the lines. Having an updated schematic plan is crucial to troubleshooting the system, developing the proper corrective measures, and successfully balancing the system.

Other mechanical infrastructure necessities, such as increasing the building outside air quantity and replacing and relocating air-handling units will further stress the imbalance of the heating system. Greater outside air levels will increase the flow required through the heating coil. Relocating air-handling units will create distribution problems, as the branch piping serving the units will have to be relocated on the main piping loop.

Cooling System

The source of cooling for the Capitol Building is the Capitol Area Central Plant. This plant serves the following buildings:

- Capitol Building
- State Office Building
- Department of Transportation
- Vets Service Building
- Harold S. Stasson Revenue Building
- Centennial Office Building
- Judicial Building
- Central Maintenance Building

Chilled water is available from the Central Plant between mid March and the end of October. While this does not provide true year-round availability, it does satisfy the need for chilled water for most of the year. The only problem occurs for existing air handling units that do not have 100% economizer (outside air) capability and require a constant source of cooling (for example unit S-1b for room G15). Replacement of those units with economizer-capable units and providing an adequate source of outside air will alleviate the need for chilled water or other similar sources of cooling.

The capacity of the chilled water system serving the Capitol Building is adequate to accommodate the summer cooling load.

Primary chilled water pumps, located at the Central Plant, distribute chilled water to each building on the loop. For the Capitol Building, secondary chilled water pumps are located in the basement pump room. The secondary pumps circulate chilled water to the air handling units throughout the building. These pumps are equipped with variable frequency drives (VFDs) which increase or decrease the flow of chilled water to each air-handling unit. Tertiary pumps circulate the flow of chilled water through the air-handling unit cooling coils. Some air handling units have a dedicated tertiary pump; in other instances, one tertiary pump serves several units.

There is a chilled water balance problem within the Capitol Building due, in part, to the fact that some tertiary pumps serve individual units and some serve several units. Situations exist where one tertiary pump starves another for flow. The location and arrangement of the pumps needs to be reviewed and modified.

As with the heating system, other mechanical infrastructure necessities, such as increasing the building outside air quantity and replacing and relocating air handling units will further stress the imbalance of the system. Greater outside air levels will increase the flow required through the cooling coil. Relocating air-handling units will create distribution problems, as the branch piping serving the units will have to be moved to different locations on the main piping loop.

In addition, similar to the heating system, is the lack of an accurate schematic plan showing the entire chilled water distribution system within the Capitol Building. The first step in balancing the system would be to document the existing conditions and create a system schematic. This schematic would show each air-handling unit and cooling coil on the system, the amount of flow required, in addition to the routing of the piping loops and sizes of the lines. Having an updated schematic plan is crucial to troubleshooting the system, developing the proper corrective measures, and successfully balancing the system.

Humidity Control

Humidity control pertains to winter humidification and summer dehumidification.

The source for winter humidification within the Capitol Building is two electric boilers. These boilers use deionized water, which is supplied from the powerhouse. These boilers are currently undersized to deliver the amount of steam necessary to increase the humidity levels in the building.

Caution must be exercised, however, when considering an increase in the winter building humidity level. Most of the existing stone walls are uninsulated and providing relative humidity levels inside of 30% or more will cause condensation on the inside of the stone walls. A study of the current relative humidity levels throughout the winter needs to occur and be documented. The maximum relative humidity level that can be maintained without creating condensation problems needs to be determined, based on building construction, in order to properly determine the required boiler capacity. Once the new humidity requirements are determined new boilers, of proper capacity, will be provided.

Of greater concern is the summer dehumidification within the Capitol Building, (or lack thereof). The high humidity levels experienced are, in part, caused by two factors: cooling/dehumidifying capability at the air handling units, and a negative air pressure, relative to outdoors, within the building. In order to reduce the humidity levels in the summer, the air handling units serving the rotunda area (S-7 and S-8) need to be replaced with new units having large enough cooling coils. In addition, the negative air pressure relationship between inside the building and outside needs to be reversed. The building air pressure relationship was discussed in greater detail earlier in this report.

Plumbing and Fire Protection Systems

The existing plumbing and fire protection systems serving the Capitol Building are in good condition at this time.

The building is not fully sprinklered at this time. In the pastyears, the offices and other non-public, non-ceremonial areas of the Capitol have had sprinklers added as they have been remodeled. This should be continued into all non-public, non-ceremonial spaces. The current water pump is sufficient to provide the sprinklers throughout these areas. The available water supply needs to be verified.

While the plumbing system is basically adequate and is currently meeting the needs of the building, the concern is the age of the piping. As areas are remodeled, plumbing piping within the project boundaries should be replaced. There is a problem with several rain water leaders (the piping serving roof drains). There have been some leaks in areas, such as the Judicial Dining Room, that need attention. The leaking rainwater leaders should be replaced as soon as possible. For the remainder of the system, replacement as part of a remodeling project should be the process.

Electrical Improvements

(by LKPB, Inc.)

Electrical Summary

The electrical systems of the State Capitol Building consist of lighting and controls, power for branch circuits and motors, power distribution, and signal/communications systems.

Energy efficiency has been greatly improved with a lighting retrofit in 1993. Exterior lighting is being made more efficient with a project in construction, now (year 2001). Dimming systems, within the chambers and hearing rooms, will begin to reach their maximum design life, within the 10-year period covered by this report, and will require attention and significant funding for replacement.

Branch circuits and motors have been upgraded and will continue to be improved as the building is remodeled. Power distribution systems are being significantly improved with the two new underground electrical rooms under the northeast and northwest parking lots and the equipment being installed in them during the summer of 2001. An additional power distribution improvement funding request was submitted to the Legislature this year that would replace obsolete and antiquated sub-distribution panels, add panels where needed throughout the building, remove the generator from the State Capitol Building basement, and provide a larger generator and emergency power distribution system in the Power House/Heating Plant across the street. With a new generator at the Heating Plant, the generator and its fuel tank (the tank now sitting on grade in the northwest parking lot) in the State Capitol Building would be removed.

Signal and communications (Technology) are covered in the report and information attached in Appendix A, by Elert & Associates. Beyond those comments are systems related to security and fire alarm. The fire alarm system was completely upgraded in 1993 and should not require significant work within the period of time covered by this report. Security systems require the most attention. Existing security systems include an extensive CCTV surveillance system and intercom system that has been recently replaced and improved, a few duress alarm pushbuttons, and door open monitoring. Security systems to monitor space intrusion, glass break sensors, object removal, more extensive card access, duress alarms, metal and chemical detection may all be desired to be added to the building within the next 10 years.

Electrical History

The State Capitol Building was built to have electrical systems from the beginning. The building has electrical conduits built into its floors and access to lights above its highest ceilings. The crystal globe chandelier in the main rotunda was designed in the original building plans to have a motor to lower it to the floor for relamping. Many of the wall sconces and pedestal light fixtures throughout the hallways and in the ceremonial spaces are original.

Remodeling projects in the 1960's covered and destroyed some of these historic elements. Spaces were covered with acoustic tile ceilings and 1'x4' prismatic lens, fluorescent light fixtures. During this time, many of the first significant systems, such as underfloor raceway power/signal distribution systems, fire alarm, security (door open), emergency lighting, audio distribution, and more extensive power distribution, were installed.

In the late 1970's an emphasis on historic restoration developed. All projects worked to restore or recreate historic light fixtures. When ceremonial spaces were restored (Senate Chamber in 1988, House Chamber 1989, for example) new power and communications systems were concealed below the floors in order to preserve the "Historic Fabric" while allowing present day technology.

While protecting the "Historic Fabric" of the building, modern office and technology is accommodated. The typical model of the "standard" for the building electrical systems was created in the 1987 Senate Office Remodel Project. This model consists of indirect fluorescent lighting, which preserves the historic appearance of the building from within rooms and from the view of the building from the outside, but also provides low-glare lighting that is compatible with computer screen use, Electric Baseboard Raceway (EBR) which encircles the perimeter of offices and provides locations for power receptacle and technology outlets (phones, computers, and TV), and closets for power and technology services within each office suite.

General Electrical Notes

Much electrical work is done as spaces are remodeled. Those remodel project costs, schedules and issues are described with each of these projects. The Elert portion of this report deals with Technology systems such as voice (telephone), data (computers), and television systems. Beyond the statements made for specific remodeling projects and for the Technology systems, there are other electrical infrastructure issues that require attention. Some of these issues are the result of electrical systems that are inadequate to meet present needs. Other electrical infrastructure issues relate to equipment that is failing due to age or obsolescence, equipment that is inefficient, and newly realized needs (such as security). The following attempts to predict these electrical infrastructure issues.

Electrical Distribution

This summer (2001) two new electrical services will be added to the building and failing, obsolete equipment in the center of the building will be removed. This is the first phase of what is hoped to be a two-phase process. The second phase, suggested for years 2002/2003 would replace panelboards that are over 40 years old, upgrade feeders some of which have cloth insulated wires, move the generator to the Heating Plant across the street, provide better power panelboards and grounding to the television facilities within the building. Except for the second phase described above, no additional infrastructure power distribution work, except that needed for individual remodel projects, is expected within the next ten years.

Lighting The exterior lighting is being improved and made more energy efficient now. Interior lighting was made energy efficient, to today's standards, a couple of years ago. Future projects would enhance controls and restore additional historic lighting. While these may be projects done on the basis of their own merits; they will usually be done as part of space remodeling described elsewhere.

Special area lighting improvements are needed in the Ground Floor West Corridor and the public/ceremonial stairs from Ground Floor to the First Floor. The Ground Floor West Corridor is used for public displays and meetings. It has insufficient light levels for this purpose. The stairs from Ground Floor to First Floor also require additional lighting for safe public use.

Dimming systems have a life expectancy of about 20 to 25 years. At that time components begin to fail at a rate and cost that becomes prohibitive when compared to the cost of system replacement. As these systems will require an expenditure of between $25,000 to $165,000 to replace, significant planning for these expenses must be made. There are several spaces that have dimming systems that may require replacement before the spaces would require remodel. These dimming systems are:

Dimming Systems Location	Year Installed	Possible Year for Replacement	Probable Cost
Supreme Court	1973	Past Due	$ 75,000
Room G15	1985	2005-2010	$ 75,000
Senate Chamber	1988	2008-2013	$120,000
House Chamber	1989	2009-2014	$165,000
Hearing Rooms 107/112	1990	2010-2015	$ 50,000
Hearing Room 118	1995	Needed soon*	$ 25,000

*Note that Hearing Room 118 has only wall box dimmers due to cost constraints in the 1995 project. These dimmers will not have the life expectancy of dimming systems and these dimmers will fail at an earlier time. Room 118 is as significant as rooms 107 and 112 and, due to its similar use, should have a similar dimming system. It is suggested that these three dimming systems be "packaged" as a project for dimming system replacement, sometime prior the year 2010, if this room is not converted to other functions, as described elsewhere in this report.

Lighting controls, throughout the building could be enhanced. Occupancy sensors have been added to some toilet rooms. The use of these devices should be added for all toilet rooms and conference rooms to gain energy efficiency. Offices and hearing rooms might also be beneficial places to add occupancy sensors. Corridors are not considered to be as beneficial due to the "historic fabric" and nearly constant high traffic. An additional option would be an upgrade of Energy Management System for control of lighting. A system for timed lighting control exists, but could be extended to circuits not yet controlled or that may add new control groups.

Special Electrical Systems and Projects

The State Capitol has a complete lightning protection system that was installed in 1994. This system must be preserved as each remodeling project is done.

Surge protection and harmonic protection is not generally provided in the power distribution systems, in the State Capitol Building. Surge arresters are being installed at the main electrical service equipment being installed this summer. Actual problems related to power surges and harmonic problems have not yet been identified in the State Capitol Building. However, the problems resulting from surges and harmonics are not easily discovered. They may be noticed in premature computer failures, overheating of electrical distribution equipment, or in faults in signaling in communications equipment. Modern computer equipment is becoming more susceptible to damage and faulty signaling. The addition of surge protection to individual panelboard surge protection and harmonic protection is suggested.

Uninterruptible power systems (UPS) are not generally in use in the State Capitol Building except for some of the equipment in the new Capitol Security Communications Center and at individual personal computers within the building. This is not expected to change. Individual remodel projects with special project requirements could change this expectation, or greater uncertainty in the public utility power supply could change this expectation.

Technology Improvements

See Elert & Associates report in Appendix A

Elevator Improvements

Historic Elevators

Although the building originally had two elevator cabs (one per shaft), some of Cass Gilbert's plans show four elevator cabs (two per shaft). The current elevators and elevator fronts were installed during the major remodeling work in December 1964. At that time two elevator cabs were installed in the west shaft and one cab in the east shaft. The two elevator cabs in the west shaft have been used for passenger traffic and the single elevator cab in the east shaft is used for both passenger and service traffic. Deliveries, equipment, furniture and trash are all transported in the east elevator. The elevator cabs and fronts that were installed at that time are "modern" in appearance and not in keeping with the historic character of the building.

The current elevators had the controls upgraded in 1997. At that time, new machines were bought for the elevators, but they were not installed. These three machines are currently stored in the Capitol for use when the elevator cabs are replaced.

After completing a study of elevator response (waiting) times, it was determined that four passenger elevators (two in each shaft) are needed to handle the current and projected traffic in the Capitol. New cabs and elevator fronts should be installed which reflect, as closely as possible, the design of the original cabs and fronts. All four elevator cabs will be for passengers, no service traffic.

New Service Elevator

A new service elevator will be added to the East wing of the Capitol. This elevator will be located in a new shaft that was originally vertically stacked file vaults and a toilet room (third floor). The other toilet rooms on the third floor will be expanded to meet the fixture count required and to replace the toilet room that is being removed. There are also some electrical and technology shafts within this shaft which will have to be relocated.

Larger Freight Elevator

The current freight elevator connects the basement with the exterior loading dock, in the northeast parking lot. This freight elevator is used for deliveries to the building and for getting trash and recycling out of the building. The current freight elevator is not large enough to fit a standard sized pallet. Therefore, some deliveries must be brought in at the ground floor. The delivery carts create a lot of noise in the corridors, which disturbs the work in the adjacent hearing room, and also adds significant wear on floor and wall finishes. Therefore, the freight elevator should be enlarged to accommodate a standard pallet.

Access Elevator

The fourth floor, in the north wing is not currently accessible. This floor currently has two informal House meeting rooms. One room is used for staff training, the other is a lounge area that is seldom used. The training room should be made accessible. Therefore, a limited use limit access (LULA) elevator should be added from the third to the fourth floor.

PHASING

Phasing of Past Work

The past work on the Minnesota Capitol has been completed in small phases during the interim between legislative sessions. The building has remained in use during this work. This has proven to be an inefficient way of getting the work completed. The work has been drawn out over a long period of time – 17 years so far. The building tenants have had to deal with dust, noise and other disruptions from the construction. This process is not very cost effective because the longer time line requires additional general construction overhead expenses.

Phasing of Other State Capitol Restoration Projects

In Wisconsin, the restoration of the capitol building was completed in four phases by wing, over 12 years. The restoration work will be completed in the fall of 2001.*

In Texas, the entire capitol building was closed for three years for the restoration and addition. The work was completed in the 1993.†

In Kansas, the restoration work has been divided into four phases over eight years. The first phase is to move and consolidate the building utilities, the second is to restore the west wing, the third is to restore the north wing and the fourth is to restore the south wing and Rotunda.‡

In Michigan, the restoration was completed in 3 years between 1989 and 1992.§

Phasing of Future Work

In order to get the projects done in a cost effective, timely manor, we are recommending that the future work be divided into phases by wing. Each wing will be closed and vacated. Then the work in that wing can proceed on a schedule that is independent of the legislative schedule. This is the only effective way to upgrade the heating, cooling, air circulation, plumbing, electrical and technology infrastructure.

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* Sarah Wyatt, "Capitol Fix-up Nearly Done", *The Capital Times*, Madison, Wisconsin, June 4, 2001.

† Texas Capitol Preservation and Extension Project, State Preservation Board, n.d., <http://www.tspb.state.tx.ys /tspb/spbg/projects/capext.htm> (November 30, 2000)

‡ Beccy Tanner, "Rescuing the People's House", *The Wichita Eagle*, Wichita, Kansas, September19, 2000.

§ *Your State Capitol – Michigan State Capitol – Rededicated November 19, 1992 – A Walking Tour*, State of Michigan, 1999.

PREREQUISITES

There are two things that need to happen before the work can begin at the Capitol:

- Expansion space needs to be found and prepared for the hearing rooms and the offices that are permanently moving out.
- Swing space needs to be found and prepared for the tenants who will be temporarily relocated by the restoration work.

Permanent Expansion Space

The hearing rooms and some of the Capitol building tenants will be moved to a new permanent location, outside of the Capitol building. There are two alternates for this expansion space.

The first alternate is to relocate the hearing rooms and offices to an existing building on the Capitol Complex. Because all of the buildings on the Capitol complex are currently fully leased, this will require that some other offices be moved off of the Capitol complex. Off campus office space will need to be located and leased for those tenants.

The approximately 91,200 gross square feet of hearing rooms need to be located as close a possible to the Capitol building and should be connected by the tunnel system. The distance from the Capitol to the State Office Building has proven to be a workable distance.

The approximately 70,000 gross square feet of offices that are relocating from the Capitol must be located in the same building as the hearing rooms. The tenants, that are moving, work very closely with public hearings.

The second alternate is to build a new facility on the Capitol Complex. The block to the northeast, which is now parking lot B, has been identified in the *Comprehensive Plan for the Minnesota State Capitol Area* as a potential development site. Because of its close proximity to the Capitol, this is the preferred location for the hearing rooms and offices.

Swing Space

Closing a wing of the Capitol requires that the tenants be moved to swing space elsewhere. Space will either need to be found in existing space near the Capitol or in a new facility. The space will need to be approximately 50,000 square feet. The exact amount, of space needed, will vary with each phase.

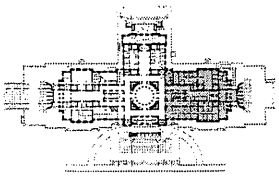
Design of Capitol Restoration and Remodeling

The design of the Capitol remodeling and restoration can begin as the new expansion space and the swing space are being prepared. The best way to design the work is to design all of the phases at one time. This will make it easier to coordinate the different construction phases and will provide more continuity of systems.

CAPITOL CONSTRUCTION

Phase One – East Wing

The east wing of the Capitol needs the most infrastructure and code compliance (fire and life safety) improvements. This wing also requires the most remodeling and restoration work. Therefore, we are recommending that this wing be completed first.



Key Items for East Wing

General Items
- New service elevator
- Rehabilitate east historic elevators (2)
- Enlarge freight elevator
- Renovate and extend circular House stair to basement
- Improve fire and life safety – smoke detection, sprinklers, etc.
- Redistribution of tenant space

Basement
- Public corridor improvements
- New public toilet rooms
- Remodel trash/recycling and receiving area.

Ground Floor
- Restore public corridor and vestibule
- Remodel offices for Senators
- New public toilet room

First Floor
- New public toilet room
- Remodel hearing rooms to offices and conference rooms.

Second Floor
- Remodeling of Senate and House offices
- Restoration of Supreme Court consultation room.
- New public toilet room

Third Floor

- Remodeling of Senate hearing rooms for offices
- Remodeling of lobbyist space for meeting rooms and/or offices for House.
- Add to public toilet room.

Mechanical

- The East Wing remodeling phase affects the following air handling systems:
  - S-2
  - S-3
  - S-4
  - S-5
  - S-6
- Unit S-2 will be removed in its entirety and the area served by this unit will be served by either S-3 or S-4. Units S-3, S-4, S-5, and S-6 all serve areas of significant remodeling. These units should be replaced at this time.
- All changes to the air-handling units will include modifications to the corresponding outside air and relief air ductwork system, heating water piping system, and chilled water piping system.
- There are toilet room modifications as part of the east wing phase. The plumbing piping within this area should be replaced with new piping. New plumbing fixtures will be provided. Any rain water leaders and storm drain piping within the boundaries of this phase will be replaced.
- The fire protection system in this area will be upgraded. In areas that are currently sprinklered, the system will be modified to accommodate the new room layout. Areas that are not currently sprinklered will be provided with new sprinkler piping and sprinkler heads.

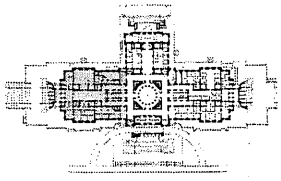
Electrical

- Power distribution for the east wing electrical work is being created in the underground electrical rooms project to be built this summer. An additional infrastructure project is anticipated to follow but that can be combined into the work required for East Wing.

- Lighting, power, and signal systems will proceed as required by the tenants operations within the spaces and with systems similar to recently remodeled spaces throughout the Capitol building.

Phase Two – West Wing

The west wing has had more previous restoration work than the east wing. Much of the fire and life safety improvements have already been completed in this wing. Also, there are fewer spaces that will be remodeled.



Key Items for West Wing

General Items
- Rehabilitate west historic elevators
- Improve fire and life safety – smoke detection, sprinklers, etc.
- Redistribution of tenant space

Basement
- Public corridor improvements
- Remodel offices for MHS
- Remodel storage and duplicating area for Senate

Ground Floor
- Remodel offices for Governor's Office

First Floor
- Remove display cases at Governor's Office and restore to windows.
- Restore public corridors.

Second Floor
- Restore public corridors.

Third Floor
- Upgrade support (mechanical, electrical, life safety, etc.) systems only.

Mechanical
- The west wing remodeling phase affects the following air handling systems:
  - S-9
  - S-10
  - S-11
  - S-12
  - S-26

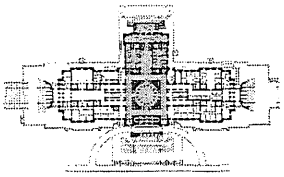
- Units S-9, S-11, and S-26 all serve areas that have significant remodeling within this phase. These units should be replaced during this phase. Even though the areas served by units S-10 and S-11 do not have a significant amount of remodeling planned, these units should be replaced during this phase of remodeling.
- All changes to the air handling units will include modifications to the corresponding outside air and relief air ductwork system, heating water piping system, and chilled water piping system.
- Plumbing piping within the boundaries of this project should be replaced during this phase. This includes rain water leaders and storm drain piping.
- The fire protection system in this area will be upgraded. In areas that are currently sprinklered, the system will be modified to accommodate the new room layout. Areas that are not currently sprinklered will be provided with new sprinkler piping and sprinkler heads.

Electrical

- Power distribution for the west wing electrical work is being created in the underground electrical rooms project to be built this summer. An additional infrastructure project is anticipated to follow but that can be combined into the work required for west wing.
- Lighting, power, and signal systems will proceed as required by the tenants operations within the spaces and with systems similar to recently remodeled spaces throughout the Capitol Building.

Phase Three – North Wing and Center

The north wing and the center of the building are currently in about the same condition as the west wing. The Rotunda restoration will be completed as part of this phase.



Key Items for North Wing and Center

General Items
- Improve fire and life safety – smoke detection, sprinklers, etc.
- Restore Rotunda.
- Redistribution of tenant space

Basement
- Public corridor improvements.
- Remodel Rotunda for MHS orientation space.
- Add a new corridor from Rotunda to Rathskeller.

Ground Floor
- Restore public corridors.
- Retain G-15 as meeting room.

First Floor
- Restore Rotunda and corridors around Rotunda.
- Replace information desk.

Second Floor
- Restore Rotunda and corridors around Rotunda.

Third Floor
- Restore Rotunda.
- Restore minor domes.
- Restore public corridors.
- Add ADA access elevator to fourth floor in House space.

Fourth Floor
- Add ADA access elevator to third floor in House space.
- Remodel House meeting room to temporary (session) offices.

Mechanical
- The north wing and center remodeling phase affects the following air handling systems:
  - S-1
  - S-1b
  - S-7
  - S-8
  - S-13

- S-22
- S-23
- S-24
- S-25

- These units should be replaced during this phase. This work will include modifications to the corresponding outside air and relief air ductwork system, heating water piping system, and chilled water piping system.
- The proposed modifications to the basement level of this phase include the routing of a new corridor through existing mechanical room space. This has a significant impact on several air-handling systems, namely S-1, S-1b, S-7, S-8, S-22, S-23, and S-24. These units will have to be removed and replaced with new units **in new locations**, most likely on different floors. Providing outside air and relief air ductwork to the new unit locations will be a challenge. In addition, heating and cooling piping will need to be routed to these new locations. Major re-routing of chilled water mains may be required in order to provide enough vertical clearance for people to walk through the corridor.
- Plumbing piping within the boundaries of this project should be replaced during this phase. This includes rain water leaders and storm drain piping.
- The fire protection system in this area will be upgraded. In areas that are currently sprinklered, the system will be modified to accommodate the new room layout. Areas that are not currently sprinklered will be provided with new sprinkler piping and sprinkler heads.

Electrical

- Power distribution for the north wing and center electrical work is being created in the underground electrical rooms project to be built this summer. An additional infrastructure project is anticipated to follow but that can be combined into the work required for north wing and center work.

- Lighting, power, and signal systems will proceed as required by the tenants operations within the spaces and with systems similar to recently remodeled spaces throughout the Capitol building.

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Minnesota State Capitol
Predesign Study

Technology report submitted to LKPB and Miller Dunwiddie by Elert & Associates

Revised June 12, 2001

Prepared by:

Wendy Chretien
Janice Colbeth, RCDD
Will Craig, CTS-D
Felix Fayngersh
Kris Green

Elert & Associates
651.430.2772
www.elert.com

Table of Contents

1 Executive Summary

1.1 Purpose and Scope of Work

Elert & Associates (E&A) was retained by LKPB, Inc. to assist that firm in its work with Miller Dunwiddie on the State Capitol Predesign Project. Elert & Associates' contractual role is to review and discuss technologies including networking, video/multimedia/sound, telephone system, infrastructure (cabling), and telecommuting.

Items and systems identified as outside of the scope of work were a) video at Senate and House Independent Systems[1], b) security systems – other than how those systems might need to interface to the covered technologies, and c) wireless systems.

1.2 Format

Our report is organized in sections by technology system type, beginning with Infrastructure Cabling systems, and ending with Multimedia/video/sound systems.

1.3 Summary of Technology Recommendations

In brief, Elert & Associates found that much has been done in the way of technology within the Capitol Building over the last several years, but that there are still a few areas that need improvement.

We recommend that in areas to be renovated, new **cabling** be installed. Due to a potential shortage of space for cabling "closets" and because of its high-bandwidth characteristics, we suggest the use of fiber optic cabling to each outlet where computers would connect. However this would require the replacement of network switches and if found not feasible for that reason, we have made alternate recommendations for a conventional copper cabling system.

The voice, data and video cabling system should be considered an integral part of the building, and thus should be managed by a single entity, which is not currently the case.

There are a number of additional cabling system recommendations to be found in the Infrastructure Cabling section.

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[1] This is understood to mean systems in the House Office Building, as well as video upgrades in the Capitol within the past two years.

For **voice** services (phones), we recommend the continued use of State InterTechnologies Group expertise.

We found a great deal of variety in the **data networking** systems of the tenants, with each having its own separate network, for data privacy reasons.

In preparation for the renovations, we suggest that each of the tenant's Information Systems departments more completely document its own network.

More specifically, the IS departments for groups that would have members moving (either to expansion space or to renovated spaces within the Capitol) should create a list of tasks to be accomplished when that occurs (i.e., an implementation plan). A single entity or person should coordinate these various plans to ensure smooth deployments/moves.

Video and multimedia systems are also a mixed bag in the current building, which has very few spaces well suited to video and audio needs. We recommend that many, if not all, of the hearing rooms move to an expansion space that could have rooms designed particularly as hearing rooms.

We also recommend the Senate TV studio (Room G4) be relocated to provide a proper environment for audio/video production.

A number of other recommendations for audio, video, presentation, and recording systems may be found in section 5.

1.4 Acknowledgements

Miller Dunwiddie coordinated and strove to provide E&A with contact information for those with whom we needed to speak. Special thanks to Mr. Jim Greenwalt, Director of Senate Information Systems, who was particularly helpful.

2 Infrastructure Cabling

Telecommunication cabling distribution at the State Capitol consists of many isolated networks serving the Senate, House, Supreme Court, Governor's office, Attorney General's Office, Minnesota Historical Society, External Media, Revisor of Statutes, Plant Management, and Security.

2.1 Summary of Cabling Recommendations

1. **After proper testing, remove all data, voice and video cabling no longer in use**. This will free up some space in cabling pathways, and eliminate a source of potential interference.

2. **Create and enforce standards for new cabling installations throughout the building** (all tenants) to include specified installation and testing criteria, and a consistent labeling scheme. This will greatly reduce the time it takes to make changes.

3. **Add conduit to the northeast tunnel where cabling is now exposed, then move cabling into that conduit.** This offers protection from both unintentional damage and deliberate sabotage.

4. **Secure Technology Closets** to reduce potential damage to expensive equipment. (See also Data Networking section.) May not be required if move to a fiber to the workstation system (see item 6.)

The next two recommendations would be an either-or choice – i.e., select one or the other, not both.

5. **Expand the current conventional cabling system**

    a. Add single mode fiber cabling to the backbone infrastructure.

    b. Add new copper unshielded twisted-pair (UTP) Category 5e cabling to workstations in renovated areas.

6. **Install centralized fiber optic horizontal cabling (fiber to the workstation) throughout the building** to add flexibility, reduce management costs, and increase bandwidth capability.

2.2 Cabling System Probable Costs

The first three items in the table are recommended without reservation.

For the remaining items, the two right-hand columns offer an **either-or** choice for a cabling system. Elert & Associates recommends the "fiber to the workstation" option.

Task	Fiber to the Workstation	Conventional cabling system
Identify and remove unused cables	$45 per cable	$45 per cable
Install metal conduits in the northeast tunnel	To be determined by EE	To be determined by EE
Pull out backbone cable from northeast tunnel and reinstall into new conduits	$25,000	$25,000
Install 12 single mode fiber optic to each TC	Not needed	$115,000
Cable changes as part of Telecommunication Closet enlargement	Not needed	$180,000
Install security locks at each TC (see also Data Networking section)	Not required, but still recommended if current systems remain in place	To be determined by Architect
Install fiber optic cable to each workstation	$320,000	N/A
New, divided main cross-connect space	To be determined by Architect	N/A
Additional electronics for use with horizontal fiber system	$100 - $150 per workstation (less in future)	N/A

2.3 Voice Backbone Cables

The existing voice backbone (between floors) cables originate from the MPOP that resides on the basement in room B6. The cables are terminated at this room on a cross-connect frame, which is in good condition and could be reused in the future. From the MPOP, the cables are run via the conduit system and free air to the multiple telecommunication closets located on east, west and north wings of the building. Backbone cables are terminated at the telecommunication closets on M-66 blocks. The majority of the cables viewed by Elert & Associates are in a good condition and can be reused in future for voice applications.

2.4 Data Backbone Cables

The existing data backbone for each tenant network was built using multimode 62.5μ fiber optic cable. At the time these cables were installed they were the best choice for the LAN transmission media. Even today, these cables can support Gigabit Ethernet (1,000 Megabits per second) for a distance of 220 meters, which is an optimum distance for building backbones.

However, these cables cannot be used for future applications that will require the transmission speeds of greater than 1,000 Mbps. Thus the installation of single mode fiber optic cable is strongly recommended to each telecommunication closet in addition to the existing multimode cable. Single mode fiber optic cable features almost unlimited bandwidth and will enable any future data and video applications.

During the site inspection, a large amount of old cables was noted to be occupying existing telecommunication pathways. Some of the cables are probably 30 - 40 years old and it is not certain whether the majority of the cables are still being used for telecommunication services. Thus, Elert & Associates recommends verifying which of these cables are in use and pulling out all abandoned cables prior to the installation of new cables to provide a clean, organized and traceable cabling infrastructure.

The backbone cables in the northeast tunnel are run without protection, leaving them open to accidental damage or vandalism, which can cost serious interruption of the telecommunication services. To protect these cables Elert & Associates recommends the exposed backbone cables be pulled out and then placed back in new 4" metal conduits to conceal and protect the cabling.

2.5 Wiring/Telecommunications Closets

A telecommunication closet is a space that supports the cable and equipment necessary for transmission between the building's backbone system and user (station) locations. There are telecommunication closets spread throughout the building on the basement, ground, first, second and third floors. Each tenant has a dedicated LAN run to a dedicated network telecommunications closet. All closets are placed at locations that assure that cable links will not exceed 295 feet (maximum cable length) from the closet to the farthest user station.

However, the actual floor space of the closets varies from closet to closet. The majority of the Telecommunication Closets in the building are of insufficient size to support an extensive list of voice, data, and video equipment. Some telecommunication closets share the space with janitorial supplies. Three closets are located behind bathrooms (one must go through the bathroom to get to the closet). These locations place delicate network electronic equipment too close to water sources. In addition, the locations behind bathrooms make access difficult

for people of the opposite gender, and can prevent immediate access in an emergency if someone is using the restroom.

Elert & Associates has observed that none of the telecommunication closets have security locks, which should be installed, to allow access only by authorized personnel.

Although the closets were established in the areas dictated by the building structure and the location of the vertical riser chases, Elert & Associates strongly recommends enlarging the size of the existing telecommunication closets where possible, in areas to be renovated, as well as to dedicate these rooms only for IS use. (Note: this work would not be necessary if centralized horizontal fiber is installed). Proper clearance for telecommunication equipment, lighting and ventilation should also be considered if the closets are enlarged.

Square Foot Area: The size (square footage) of a Telecommunication Closet (TC) should be determined by the size of the area it serves. The following chart indicates industry standards:

Area Served	Closet Size
5000 square feet or less	10' x 7' closet
5000 to 8000 square feet	10' x 9' closet
8000 to 10,000 square feet	10' x 11' closet
10,000 and above	11' x 12'

2.5.1 Other Issues

In Room B6, the Main Point of Presence (MPOP) where the external phone lines and other circuits enter the building, there appears to be no lightning protection on the incoming cables. This is the responsibility of the company/ies (Qwest, etc.) providing those connections, and *should be corrected immediately.*

Further, throughout the building it was noted that firestopping (special material packed into sleeving to help keep fires from spreading) was not present in the cabling system installation. Elert & Associates understands that this is being addressed in all new work in the building, but *recommends an all-inclusive project to close all such openings throughout the building.*

2.6 Horizontal (station) Cabling

A universal building wiring/cabling system is one of the essential building blocks of the information "superhighway", and critical to the support of effective networks. Cabling infrastructure consists of the cables and means of connection to the various types of technology within a building. The capitol building has several existing Category 5 (Cat 5) networks installed from three to six years ago. A

majority of the cables placed in the period between 1994 and 1998 are installed according to the industry standards. These cables will support data transmission up to 100 MHz and would be able to serve building needs for several years.

With network requirements changing constantly, it is important to employ a cabling system that can keep up with the demand. For users who currently have Cat 5 installed, the question of whether to deploy higher grade of twisted pair or fiber is pressing. Installed Cat 5 will support only the current generation of LAN speeds (100 Mbps). When the time has come to upgrade the LAN speeds, the cables need to be re-tested to see if they can support Gigabit Ethernet (GbE). If the existing cable will not support the needs, then the building should be re-cabled with higher grade copper cable (Category 6) or optical fiber cable. A Category 6 solution will support up to 1,000 Mbps (Gigabit) Ethernet.

Even though it is unlikely that users will need gigabit speeds to the desktop any time soon, Elert & Associates recommends that the State Capitol look for simple, straight-forward migration paths that will allow its tenants to upgrade their networks incrementally as needed. The days of re-cabling to adopt new networking technologies are past. Today's structured cabling system should provide seamless migration to tomorrow's network services. One media that provides utility-like service is optical fiber.

What value does fiber provide in the horizontal network? Fiber has the largest bandwidth of any available media. Fiber is immune to electromagnetic interference (EMI) and radio frequency interference (RFI). It cannot be tapped easily, so it's very secure. Fiber transmission systems are highly reliable. Network downtime is limited to catastrophic failures such as a cable cut. Soft failures such as loading problems do not affect it. Interference does not affect fiber traffic, and as a result, the number of retransmissions is reduced and network efficiency is increased. Optical fiber traditionally has been viewed as an inherently more expensive option than copper. Today, several factors are bringing the installed first costs of the two media closer together.

The cost of horizontal multimode fiber cable is now comparable to the cost of enhanced twisted pair (Cat 5e) and is lower than Category 6 twisted pair.

Pulling fiber cables now costs less than pulling copper because there are fewer regulatory restrictions regarding fiber cable placement. For example, special conduits or spacing considerations when running next to power lines are not as restrictive when installing fiber optic cabling. The introduction of a new generation of connectors, such as the MT-RJ (AMP), and the LC (Lucent) connectors, also make fiber connection quick and easy. These connectors are small (RJ45 footprint) and can be assembled in the same time as the RJ45.

Thus, we fully expect that fiber to the desktop/workstation will be a reality during the planned 10-year lifetime of this planning project. As such, it would make sense to pull fiber cabling wherever renovations take place.

2.6.1 Centralized Optical Fiber Cabling Design (Recommended)

Based on the proposed changes in the use of spaces at the State Capitol building, Elert & Associates recommends a centralized horizontal fiber cable system.

This centralized optical fiber design offers many benefits, including improved security, fewer points of failure, and reduced telecommunication closets renovation cost. Further, consolidating network electronics, servers, and power sources in a single communication closet greatly simplifies network management, and makes more efficient use of ports.

In this design, all data electronics would be housed in one area/room (the area can be securely divided among the various tenants: Senate, House. AG, Governor's Office, etc.) and fiber cables would provide direct connections to every workstation outlet in the network.

This would be in contrast to the traditional design, where active electronics are currently housed in undersized telecommunication closets all over the building.

The fiber optic centralized cabling is simplicity itself. The main cross-connect (room where the electronics housed) is linked to desktops in one of two ways.

1. Splice cabling to jumper cables in intermediate closets and then link to the desktop.
2. Terminate cabling on passive patch panels at intermediate closets and use jumpers and horizontal fiber cables to connect to the desktop.

Passive patch panels require little real estate. Also, unlike intermediate distribution frames containing active electronics, passive patch panels require no power, air-conditioning or grounding.

In areas not to be renovated, fiber would be installed alongside the existing copper cabling, which would not be removed and could continue to be used until the various tenants are ready to phase in the fiber system. This is also the case with current copper voice cabling. Eventually we foresee voice communications becoming part of the "data" network through a technology known as Voice Over Internet Protocol (VOIP), but until that is widely accepted, the tenants of the Capitol can continue to use the existing copper cabling.

The one drawback to this design is the additional cost for opto-electronic devices (switch ports and network interface cards with fiber connections.) In absolute terms, the end-user is likely to pay $100-$150 more per port. As volume rises, the price differential will decrease, thus one can expect a per-port premium of only $25-$50 for fiber in a few years.

3 Voice Services and Telecommuting

There are many different agencies represented within the State Capitol. The state InterTechnologies Group (InterTech) is the entity that supplies these different agencies with voice and data services, however they don't supply hardware to the agencies. InterTech supplies PBX-based phone service (lines and features) and also voicemail services under the State contract. It is important that any agency that needs service, contact InterTech for its needs. As the technology field is changing, InterTech is also changing to keep current, so it is able to offer the most effective and productive services available.

3.1 Guidelines

Each of the agencies within the State Capital has its own set of guidelines to follow for service. It is important that each agency follows those guidelines. InterTech is aware of the guidelines and provides the information needed to best provide service to the agencies. If an agency is requesting new service or hardware, there are vendors that can be contracted for hardware under the State contract. Their line service must be through InterTech.

3.2 Reduce Impact During Construction Phases

It is important to keep the service working during construction phases, and one of the biggest obstacles in construction is cabling. The State Capital's cable infrastructure is very difficult to route and locate. It is important to keep phone service and data networks functioning. In the State Capital the telephones can work because of the State Centrex system. This system allows the user to move within the building or outside of the building and still be able to retain the same number and continue the four-digit dialing.

3.3 Telecommuting

InterTech does provide the service for Telecommuters, but it is up to each agency to set up its own guidelines for telecommuting. Each agency will use the State Centrex according to the guideline they need to follow.

3.4 Future Services

Telecommunications and data networks are continually changing everyday, and InterTech is also continually enhancing its services to keep up with the way technology is moving. They continue to offer state of the art services and plan on doing so in the future. They are the driving force for the state agencies.

3.5 InterTech's Service Direction

The Technology Policy Bureau is the basis for the direction of technology for the future. This information is found in the "Master Plan for Information and Communications Technology in Minnesota". Being the service agency, InterTech's goals and strategies are intertwined with the "Master Plan". InterTech has taken its client's needs into consideration and is making a great effort in making sure it is offering the best services to meet its client's needs. Its network and service document includes information on the following services:

- Voice Services
- Data Services
- Video Services
- Network Management
- Support Services

For more information, InterTech's master plan is available at www.mainserver.state.mn.us/intertech/directions.html

3.6 Recommendation

It is the opinion of Elert & Associates that InterTech is now providing the best voice service to meet the needs of the various State agencies housed in the Capitol building, and that those groups should continue using InterTechnologies to provide quality voice services.

4 Data Networking Systems

Due to the number and variety of organizations that are housed (or partially housed) in the State Capitol Building, there are multiple separate data networks in place. Thus there is some duplication of equipment and systems.

However, from a network security standpoint, keeping networks separate is advantageous. Based on the variety of user groups in the Capitol building it makes sense to have distinct networks. This is comparable to a commercial office building where each tenant would have its own network.

The only two points where there is equipment for multiple tenants in the same location are the MPOP location (Room B6) and Room B18.

Each of the tenants has its own network run by internal personnel. All of these tenants do however utilize the services of the state InterTechnologies Group (also known as Inter Tech) to connect to the "outside world."

A router situated in Room G3 specifically handles all *legislative* traffic that leaves the building. The Senate Information Systems group maintains that router. Other tenants have similar arrangements, but may be connected by fiber to routers in different buildings.

4.1 Senate

Since the Senate occupies approximately 70% of the space within the building, we paid special attention to its network systems. Mr. Jim Greenwalt and his staff assisted in our inquiries.

4.1.1 Current Systems and Services

The Senate upgraded its infrastructure cabling for voice and data in 1998, and added or upgraded data network equipment at the same time.

The core or main device for the Senate network is a 3Com brand CoreBuilder 7000 switch that is located in the main computer equipment room G3. From here, fiber optic cabling connects to the MPOP and from there it is distributed to multiple Telecommunications Closets throughout the Senate areas of the building. 155 Mbps ATM traffic is sent over these cables to the TCs. Each of the TCs contains switches that take in the 155 Mbps signal and distribute it to the various users in the area served by that closet. End user ports are mostly 100 Mbps switched Ethernet, but there are also a few shared hubs in specific locations. All switches are 3Com brand; hubs are Hewlett-Packard brand. There are UPS systems in each closet housing Senate data equipment.

The CoreBuilder in G3 also connects to another CoreBuilder in the State Office Building. That switch serves the minority offices located there.

A fiber optic feed from the Senate video control room to InterTech, allows the distribution of unicast and multicast streaming video (video over the Internet) to be used when desired.

Video from within the building is sometimes multicast over the legislative network, but only within the Legislative Intranet. This means that multiple simultaneous Senate users can view live video on their computer screens.

A Citrix brand MetaFrame system with four dial-in lines is used to provide remote/telecommuting connectivity for Senators and authorized staff members.

With the exception of the payroll, financial and human resources applications, which run on an AS/400 in the Fiscal Analysis area, the applications used by the Senate are hosted on seven Intel-compatible servers located in six locked cabinets in Equipment Room G3.

4.1.2 Current Problems/Issues

1. The main equipment room (G3) is not a secured area, and in fact part of it is used as a hallway. While the Senate attempts to have a staff member at the Help Desk who can see those who enter, this person's main function is to respond to requests for help, not monitor the area. Although the cabinets are locked, it wouldn't take much effort for a determined intruder to enter those cabinets and potentially thoroughly decimate the servers.

   Recommendation: if G3 is to remain the main computer room for the Senate, it should be secured in some way, and not part of a traffic pathway.

2. Some of the technology closets in which network switches are housed are often left unlocked. Someone could very easily either inadvertently or purposely damage the cabling and switches, and/or attach a network analysis "sniffer" device to copy traffic sent over the network.

   Recommendation: We understand the building is to be re-keyed soon. At that time, the technology closets should be keyed alike (to each other), but differently than all other spaces. Then only specifically authorized staff members should be entrusted with keys.

   Another option to secure these rooms is the use of biometric (voice recognition, fingerprint or retinal scanner) devices.

   This implies that a single organization be responsible for the closets – logically this would be either Plant Management or Capitol Security. The chosen department could provide ongoing access to authorized IS personnel, and allow access to others only on an as-needed basis.

3. Some of the TCs are also used as storage for supplies and janitorial equipment. The potential for damage (from dust and liquids) to these expensive devices is high.

   Recommendation: A policy should be put in place stating that designated technology closets are not to be used for storage.

4. The electrical power to Room G3 is only partially conditioned. This means that systems in that room are more subject to power supply failure and that more expensive line-conditioning uninterruptible power supply (UPS) systems must be used. [We understand this issue will be resolved when the new electrical systems for the building are brought online.]

5. As a procedural matter, it appears as though all backup tapes for not only the Senate, but also the House and the Revisor of Statutes Office are stored in a single fire-resistant cabinet in Room G3.

   Recommendation: If they are not already doing so, we suggest these groups use off-site archival storage in addition to this.

4.1.3 Future Issues/Technologies

1. The Senate IS group is concerned about potentially higher future bandwidth needs. Streaming video is likely to become much more popular in the near future, and would place heavy demands on the network. Further, they are also aware that 3Com is no longer manufacturing higher end switches, and thus that the Senate may need something different to be able to provide Gigabit (1,000 Mbps) connectivity in the future.

   Recommendations: Use network management tools (such as 3Com Transcend) to monitor traffic levels and types.

   When streaming video and audio become more prevalent, replace the core switch with one that has a larger capacity, and add Gigabit modules to the TC switches. Current front-running brands are Cisco Systems, Foundry Networks, and Extreme Networks.

2. The Senate is currently exploring options for archiving audio-only or audio/video recordings to digital format. If this is implemented it implies the need for a means of long-term digital storage, and for a fast network connection to that system, because it will also need to be retrieved.

   Recommendation: continue investigating potential choices, with emphasis on hierarchical file storage (HFS) systems to ensure that data is readily retrievable.

3. Another potential initiative is the use of biometric authentication[2] for entry systems to certain areas and for secure access to laptop computers. At door/entry locations, this would require cabling.

   Recommendation: Systems such as this should always be part of an overall plan[3]. Therefore the first step is to identify where these systems are needed and/or would be used. Next wiring pathways should be designed. With that done, we then suggest retaining a security consulting firm to make specific recommendations for equipment and to project costs.

4.2 House

The House IS group supports 30 desktop computer systems at the Capitol building as well as 134 laptops carried by House members. Those laptops are frequently used in the House chamber (floor).

Three of the Technology Closets in the building contain the network equipment for the House. The backbone among these closets is 100 Mbps over fiber (100Base FX). Each of the closets houses at least one switch and from 3-12 hubs for end user ports, depending on end user needs (the 12 hub configuration serves the House Chamber and surrounding spaces.) Switches are new within the year, while the hubs are up to five years old. The IS group intends to replace all hubs as soon as possible.

There are no file/print servers at the Capitol building for the House. However, there are NT Servers in the House video control area. These are part of a new Internet-based video system (where web users can go to a specific web address and view live video from the House floor). This system is to be used throughout each session. Live video of House proceedings will be fed into a system (an Encoder) that translates it into a digital format. This signal is then sent via ISDN circuit to a provider who will make it available on the web.

This is in addition to the current multicast system that is for use only within the Capitol.

The House IS group would like to be able to provide screens/PC's embedded into the desks in the House Chamber. This would save House members the need to carry laptops back and forth to that room.

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[2] Biometric authentication maps some part of the human body to use as a security validation. Some examples are fingerprint ID, retinal scanners and voice recognition. Fingerprint ID systems have become quite feasible and reliable recently. Systems to attach to laptop computers cost as little as $100 per unit, but installation takes some time and expertise.

[3] Note: the Senate Information Systems department is currently re-writing its security policies and procedures, but any biometric initiative should be worked through in cooperation with Capitol Security, as well as the other tenants.

The House shares with the Senate and the Revisor of Statutes Office, an Internet link through InterTech.

There are no specific recommendations for the House data networking system.

4.3 Governor's Office

This office has a rather surprisingly large number of network ports – 96 – half of which are shared hubs, and the other half switches. Nearly all the ports are filled, but unless the Governor's office space were expanded physically, there would be little chance of growth in the port count, because of the current density.

Network cabling is sufficient to the current needs for the office areas. There is no cabling in the public areas due to a need to preserve the historic aspect. If networking were required in those spaces in the future, it may be possible to use an 802.11b wireless data system with the access point located in one of the adjacent office areas.

The connection to the outside world is a 384 Kbps channel out of a fiber connection to InterTech.

This office has three Windows NT-based servers running email, an advanced constituent database, and a web based front-end for that database.

This office used the InterTech connection to provide a streaming video version of last year's State of the State address.

There are no specific data networking recommendations for this area.

4.4 Attorney General's Office

This tenant has 24 workstations on its local network, plus several printers. These are attached to a newer 48-port Cisco System switch (model 3548.) One server here is a Windows NT backup domain controller (BDC).

All the data equipment for this area is located in a locked cabinet in a hallway of the area. This then constitutes the Attorney General's Office technology closet (TC) in this building.

There is now no fiber from the MPOP (B18) to this cabinet, but the AGO intends to add 12 multimode fibers in the near future.

New data (and voice) Category 5 cabling was just installed in 2000 and includes two data jacks to each outlet.

The AGO owns a firewall and router, which currently are located at the Capitol and attach to an InterTech router in B18. AGO intends to move these systems to its 525 Park office building, and connect via a new 24-strand fiber cable back to the State Capitol building (this fiber is planned, but not yet installed.) After the fiber is put in place, the Internet connection would be moved either to the DOT building or the Centennial Office building. Thus, the AGO TC at the Capitol would essentially be just another technology closet from the 525 Park building.

Future technology uses may include streaming video for training and/or orientation purposes, and Voice over IP (VoIP.) Based on the planned network, implementing either or both of these should be quite feasible.

4.5 *Media (press)*

This tenant is not one cohesive group as the others are, and is also somewhat outside the organization. There are also two subdivisions within this group - the metro area companies and those from greater Minnesota. The latter are not on-site throughout the year. These factors make it difficult to provision services.

Currently the media representatives who need data network connectivity use phone modems to connect either to the Internet or to their respective office/company networks. This ties up existing phone lines or requires additional lines.

For competitive reasons, it would be unlikely for the various media tenants to cooperate on a shared network infrastructure, thus an outsourced solution such as DSL is a good option.

For this reason, the Senate IS department recently informed media users of the cost and means to obtain Digital Subscriber Line (DSL) services for Internet connectivity. This would use existing phone wiring and thus not require new network cabling. The benefit is faster Internet access (from 128 Kbps to 1,540 Kbps, depending on cabling facilities and what the tenants are willing to pay.)

Please note however, that if the Media area were moved or renovated, we do recommend local (in-building) data cabling be installed, which could then be leased to the various tenants, as needed. Each tenant can then provide its own switch or hub for internal connectivity.

4.6 *Capitol Security*

Linc Starkey who is an employee of the Department of Administration, but is stationed in the Capitol Security area, oversees all of the computerized automation systems for the Capitol building. These include the automated fire management

system, heating/ventilation/air conditioning (HVAC) system, and access control (door locks/security systems.)

These automated systems are set up as separate networks for reliability and security reasons. These systems do not require interfaces to other networks in the Capitol. Each runs mostly on fiber optic cabling. New proximity readers[4] are being installed for door access control – these same systems are used throughout the Capitol complex. Tenants' ID cards include programmed information as to which doors those users are allowed to open.

Mr. Starkey requested that in any renovation in the building, his group be consulted as to pathways for fiber cabling for automated systems.

With regard to Capitol Security/Public Safety as in internal building tenant, their group just moved to a newly renovated area. That space has network cabling that meets all current standards.

4.7 *Revisor of Statutes*

The Revisor's office has a network that was installed in 1997, based on Nortel Networks (formerly Bay Networks) equipment. This network uses a combination of two 155 Mbps ATM links to connect to the State Office Building, and multiple 100 Mbps Fast Ethernet to connect to Technology Closets within the Capitol building. It uses some of the multimode fiber in the backbone to connect switches in five different closets. All end user ports are 10/100 switched Ethernet.

This network should be usable for another two years or so, after which the electronic components will begin to require replacement. At that time, the likely needs will continue to be 100 Mbps at the desktop, but with greater bandwidth in the backbone. The probable technology to use at that point would be either Gigabit Ethernet or its upcoming big brother 10 Gigabit Ethernet. Current prices for Gigabit Ethernet run roughly $800 per port, but in two years that will likely be around $500. This is would be easily cost justifiable for the amount of bandwidth.

4.8 *Minnesota Historical Society*

Currently MHS has three networked users in the building. These are connected back the main MHS facility via an ISDN line from InterTech. To provide the best possible throughput, users have access to some internal applications via Citrix MetaFrame.

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[4] A card-based system where the card needs only to be near the reader to operate. Cards can be kept in clothing, wallet or purse and still activate the mechanism.

The network needs for MHS would increase greatly if more of the building were to be used for ceremonial and exhibit areas. Potential FTEs would increase from 4.3 (plus 21 site guides) to 10.75, plus additional resale clerks, volunteers (15) and site guides (30 – currently 15.) It is difficult to predict all the new data needs for this organization due to the unknowns about space. Certainly some cabling and network ports would be needed for any new cash register (point of sale) systems, as well as to any additional stationary desk/office areas.

We are unable to estimate technology systems and costs for potential new exhibit areas since that can vary so widely[5]. It would be possible to provide recommendations and estimates after MHS has generated tentative plans for exhibit areas.

4.9 Judicial

The Supreme Court areas in the Capitol do not currently include any data networking capabilities.

There is a desire in the fairly near future to be able to allow presentation of evidence via PowerPoint presentations and similar technologies. This would not typically require a network connection, but can be done as a stand-alone system.

However, another future request is for network connections at the Bench, the Counsel tables, and the center lectern. Due to the physical nature of the room, the only viable option for this space is wireless networking. If this were done in the near future, the technology to use is 802.11b (11 Mbps maximum.) The room would likely require two access points, plus each laptop or computer to be connected would need a special wireless interface card.

Cost per computer is approximately $250, while the access points should cost ~$1,200 each. For a potential 20 simultaneous users, this would *total $7,400*. The *useful lifetime of this technology is approximately three years*, after which it should be reviewed for potential upgrade or replacement.

Should the justices wish to communicate with their offices, this network should be tied to the Judiciary building's network. This could be accomplished either via a routed connection provided by the InterTechnologies Group, or via installation of a direct fiber connection through the tunnels between the buildings. This could be part of or follow the same path as the fiber currently used for video/audio feeds between the buildings.

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[5] As we have seen in our experience at the Science Museum of Minnesota and the new (under construction) St. Anthony Falls Heritage Center, which is also part of the Minnesota Historical Society.

5 Video/Multimedia/Sound Systems

5.1 Senate Video/Television

Facilities currently set up for providing content over the dedicated internal Radio Frequency (RF) channels and to remote feeds such as Twin Cities Public Television (TPT) and the Department of Administration for web streaming.

5.1.1 B29 – Control system for 16 cameras located in four rooms (Senate Chamber, 107, 112, 15).

The system is in the midst of transition from analog to digital television technology. Besides equipment issues (future procurement of additional digital signal routing, switching, processing and monitoring), the major architectural technology issue is one of cabling. While all of the cameras are digital-ready, much of the cabling between the hearing rooms and the control room is not. There is some discussion in the industry of whether the particular cable (Belden 8281) may be functional with digital at some level, but *replacement of non-digital-capable cabling should be a priority* and should be coordinated with the larger re-cabling efforts, as well as with a view towards wider video interconnection between spaces. Most of the cabling within B29 is already digital-ready.

5.1.2 Room G4

The Senate studio has significant architectural technology issues. The entire system is currently wired with non-digital-ready cable. The acoustical treatment of the room consists of acoustical foam squares haphazardly stuck to the walls. The overall effect (acoustically and aesthetically) is less than what is normally desired for a room of this type. There is a significant amount of mechanical noise, which impairs the production quality in the room. The lighting system creates a great deal of heat, which is insufficiently handled by the HVAC system. The current high-volume system causes "rushing" air sounds, which necessitates turning the system down during production, when it is needed most due to the lights.

Solutions for this space could include:

- Relocating the Studio function to a space with less mechanical noise
- Relocating the nearby equipment that is causing the mechanical noise
- Providing proper acoustical treatments to the walls
- Replacing the current incandescent lighting with studio florescent lighting for greater energy and thermal efficiency

- Exploring whether the ceiling can be raised to allow more space for the grid, which hangs lower than normal for a room of this type.
- Replace failing HVAC system with one that operates with less noise and can be run during normal studio operations.

The equipment in the Studio and adjacent control room is analog and will likely need to be replaced in the next 10 years. The longer the wait, the greater the costs associated with equipment maintenance and downtime. All of the existing components are analog and most will need to be replaced by digital components.

The existing furniture console in the studio control room should be replaced to accommodate the different configurations of digital equipment and to provide better ergonomics for the users.

The Sound Booth in the space also has serious mechanical noise issues. Part of these could be addressed by relocating the flag pole, which is taller than the ceiling and has caused a ceiling tile to be removed to accommodate its full height and therefore has compromised the noise blocking function of the drop ceiling.

The Editing Suite in this space is currently used for equipment and box storage. This space could be put to better use. The Senate Media Services staff expressed the need for having a space where they could receive, store, and service their equipment. This proposed space would have a workbench area with tool/instrument storage and proper shelving for safely storing equipment that has been received or waiting for service. The Editing Suite might be good site for this function.

5.2 Hearing Rooms

5.2.1 Room 15

This Hearing Room has needs in the area of sound reinforcement and presentation technology. The current sound system needs to be made more reliable, according to Senate Media Services. While the existing Shure AMS system has proven to be effective in meeting the needs of the Senate, newer systems may provide additional benefits while meeting the high performance expectations established by the AMS system.

From an architectural technology standpoint, the main area of interest is in visual presentation. Currently, the witness/presenter(s) sits at a wide, deep desk, upon which two microphones sit. These are connected to floor pocket jacks underneath the desk. There is no provided technology to facilitate visual presentations (computers, media players, etc.), nor is there any permanent display technology that allows Senators or audience members to see what is being presented. Currently, a portable screen and projector is set up beside the presenter's desk to

enable the Senators to see the presentation. The Senate TV system is then forced to try to focus a camera on the screen to get the image to the viewers (highly unsatisfactory).

One approach to the presenter location would be to either supplement or replace the existing desk with a technology-friendly and suitably attractive furniture piece that would accommodate equipment such as a document camera, dedicated presentation PC, Laptop interface connection (network, graphics, video, audio), and other devices to accommodate transportable media. The cabling requirements for this presentation station would require the addition of floor pockets or boxes, with space to accommodate at least a two-gang plate of A/V connectors and preferably up to a four-gang plate. The cable pathways would need to extend to the sound system, to the Senate Media control room (B29), to the nearest TC, and to the location of the local room displays. All of the video cable provision should be digital-ready.

There are many ways to display the information to the Senators in attendance. The common requirement for these methods is that the size of the image must be in correct proportion to the distance from the image to the viewer to allow the detail of the image to be perceived by the viewer. If the image is small, the distance must be also small. If the distance is large, then the image must also be large.

Looking at the room from a functional perspective, using a large-screen projected image has several disadvantages; the largest being that the lights must be turned down to avoid washing out the color on the screen. A large screen can also block the view of cameras and/or members of the audience. The screen must be large in order to clearly show detail to the Senators seated furthest from the screen.

Medium-sized monitors are often used in legislative and deliberative spaces. They are often mounted from the ceiling or close to the floor to prevent interrupting sightlines of cameras or the audience, as a large projection screen would do. In this room, flat-panel monitors could be hung underneath the air vents between the columns around the room. This would not block sightlines, but might require the use of flat-panel monitors, which in their present state of technological development offer some challenges that will be addressed later in this report. Mounting monitors on moveable carts near the floor is an option, but this tends to cause visual and physical clutter in the room, and would restrict wheel chair access both due to the physical size of the monitors and the cables that would be stretched across the floor.

Small sized displays are an excellent option for a number of reasons. They typically do not cause sightline issues, they can be concealed within furniture or casework, they are close enough to the viewer that all of the relevant detail can be easily seen, even by those without a current prescription. The disadvantages to deploying small monitors up-close include forcing viewer to look down to see their displays, which can appear on a camera mounted above the view as looking

inattentive or drowsy, and that the monitors compete for space with papers, books, folders, and other materials brought in by the Senator.

An option that is currently not quite practicable but may be so in a few years is using the laptop screen displays of the Senators as a tool to view presentations. Video and graphics that are streamed through Internet, WAN or LAN will likely replace direct analog connections within the next 10 years. *This means may prove to be the most efficient way of getting a viewable presentation in front of each Senator without adding clutter, cables, or cost.*

To provide the connectivity, some sort of wired interface would likely be necessary for two reasons. First, streaming video consumes more bandwidth than envisioned wireless systems can support, especially considering the number of users that would be operating simultaneously in the space. Second, the laptops would likely a need power source and therefore some sort of cabling must be brought to the top of the desk. One solution could be a "pop-up" interface that is flush with the tabletop until activated by a light press or touch. The interface would then rise to two or three inches above the desk (itself only a few inches wide and deep) and expose network, power, audio and video connectivity.

The presented images would need to be provided to the Senate television system for broadcast. This could be done either through direct analog connection using scan converter technology where appropriate or through the same future streaming technology used to supply images to the Senator's portable computers.

Thought would still need to be given for how the audience would see the presented images. In Room 15, based on the seating patterns, it would be difficult to provide adequately sized images to each audience member. The most efficient strategy may be to use a combination of technologies, commensurate to the importance to the Senate of providing the presentation visuals to the audience.

The lighting in Room 15 is low and warm from a video perspective, but within the specifications for the cameras that are currently installed. More lighting would be better from the video production perspective, but that would need to be part of a major reworking of the ceiling to be effective.

5.2.2 Room 112

This hearing room shares many of the same issues of sound reinforcement and visual presentation as Room 15. The primary difference from the visual presentation perspective is that the Senators seated along the table face each other and look down the table in a perpendicular fashion towards the presenter(s), unlike in 15 where each Senator faces the presenter(s) more directly due to the curve of the table.

This seating difference is important when consideration is given to where Senators are looking during a presentation. It can be expected that in Room15, if the laptops are used as a display device, that Senators would look at the presenter directly (straight ahead) and at their laptop (straight ahead and down). In 112, there is very limited space between the pillar and the presenter's desk. Hanging a screen from the ceiling over the presenter's desk would be inadvisable due to aesthetic and lighting factors. Other options would include hanging flat panel monitors from the pillars, but this would have Senators looking up at the monitors high above them on the pillars on the other side of the table from them, while turning nearly ninety degrees to their left or right to see the presenter. Not all of the Senators at the table would have a monitor in their field of view that would provide an adequate image. Also, Senate Media Services has expressed concern that this approach might interfere with sightlines of the cameras.

Once again, the small, close monitor would seem to be the best approach, given the sightline issues. The alternatives would be to build monitors into the table (requiring extensive casework to be done on a very exquisite piece) or relying on future streaming technologies to connect with the Senator's laptops. This last approach would seem to provide the best viewing angles, as Senators could adjust the position and angle of their laptops to be slightly "down-table" and reduce the amount of craning of necks necessary to see both the presenter and the presented images.

The physical changes necessary for these types of systems would be a connection point in the floor underneath the presenter's desk for the medias that are being presented, and provision in the hearing room table for network connectivity (power and network).

The video production element most needing change in Room 112 is the windows. Direct sunlight in the mornings can make certain camera shots of Senators highly undesirable due to the significant difference in brightness and color temperature between room lighting and natural sunlight.

This could be corrected using blinds that would eliminate or reduce the direct and indirect sunlight to levels that can be adequately compensated for by the cameras.

5.2.3 Room 107

The layout and challenges of the room mirror those of Room 112. The main difference is that the afternoon sun causes problems for certain camera shots.

5.2.4 Room 125

This conference room would require extensive technology work to bring it up to a usable level for broadcast and presentation purposes. In particular, the audio system needs to be redone, as the current system shows frayed, ragged bare wires

sticking through pieces of carpet. In conjunction with adding cameras, extensive window treatments would be necessary to ensure proper camera function. This room has been identified by Senate Media Services as having cabling for video but has no cameras at this time.

Presentation technology would have many of the same issues and solutions as the previous conference rooms, but the sightlines are better for a large-screen projection type display than 15, 107, and 112, should a large projection screen be desired.

5.2.5 Room 123

This conference room would require both extensive architectural and technology work to become a usable space for broadcast and presentation purposes. The existing lighting grid is completely unusable for video broadcasts and would need to be replaced. The existing screen is also unusable. This room has been identified by Senate Media Services as not having cable installed for cameras.

Presentation technology would have many of the same issues and solutions as the previous conference rooms, but the sightlines are better for a large-screen projection type display than 15, 107, and 112, should a large projection screen be desired.

5.3 Senate Chamber

The single biggest problem in the Senate chamber is that some members cannot hear each other when speaking from their desks. The reason for this is that while each Senator has their own microphone, the speakers are in the ceiling along the base of the dome. This arrangement causes the audio to have a strong echo factor and can be unintelligible to listeners.

The system in the House chambers has successfully addressed this problem by adopting a distributed-delay mix-minus system wherein the speakers are located at each individual desk. This arrangement greatly increases intelligibility, which along with gain-before-feedback are the benchmarks by which sounds systems of this type are measured. An adoption of a similar system would solve the intelligibility issues associated with having the speakers so far away from and above the intended audience. Advances in digital signal processing technology have made the integration of this type of system much simpler than when the House system was designed.

Note: a study was commissioned in January 2001 to review audio issues, including sound reinforcement, in the Senate Chamber. This study is to be completed in Spring 2001.

The lighting in the Senate chamber is insufficient for optimal video camera performance. Careful study should be given to how (and if) additional base lighting that is not objectionable could be integrated into the room. This could be as straightforward as

increasing the wattage of the existing fixtures or adding additional ones. More lighting would make the Senators look better on camera.

5.4 Minnesota Supreme Court

Two primary multimedia technology needs have been identified for the Supreme Court's Capitol spaces. These needs are the Supreme Court Courtroom Chamber and the Video Broadcast System.

5.4.1 Supreme Court Courtroom/Chamber

The courtroom **audio system** needs to be upgraded to provide better quality sound and more reliable performance. Modern courtroom audio design includes such features as active sound masking for bench conferences, dual language translation systems and distributed speakers built into the furniture in the courtroom. The format of cases heard before the court and the historical nature of the room may make these features unnecessary and the extensive cabling burdensome to provide. The sound system might be better modeled on those of a top-quality deliberative hearing room rather than a modern high-technology criminal or civil court.

The existing **recording system** is in need of replacement. This new recording system may require multiple channels of inputs for recording, which may affect the design of the overall audio system based on the need to have separate channels for different groups of microphones. Whether this is necessary must be determined by the specific recording needs of the court. The recording signal(s) would exclude any sound masking and include all aspects of the proceedings, ideally even where participants have inadvertently moved away from their microphones when speaking. The format of the recording input must be compatible with the selected recording equipment (analog versus digital).

PowerPoint and video **presentations** are likely best presented with portable equipment rather than building this technology into the architecture in this room, based on the amount of use and the multiple purposes that the room is used for. There are portable systems designed specifically for courtroom use that are self-contained and simple to use. The only required permanent provisions for these cart-based units are computer network jack(s) and electrical power.

A request from Supreme Court staff was made for a replacement **timing system**. The timer system alerts the presenter that their time has expired. This could be designed as part of an integrated control system or done as a separate stand-alone system using any of a range of products designed for this purpose.

Another request is with regards to a "**panic button**" which is installed at the front of the courtroom. The request is that an additional or parallel-wired switch or

button be added to the Marshall's table, along with a telephone jack connection. This would enhance the security of the proceedings.

5.4.2 Supreme Court Video Broadcast System

The type of feed that comes out of the Supreme Court area should be compatible in type with those provided from the other areas within the Capitol. This means that the systems in this area need to migrate from analog to digital as the other systems are upgraded.

A request was made to add three voice-activated/tracking cameras to the courtroom for use in broadcasts. Camera housings should be designed with a specific camera technology in mind, be it cameras similar in quality to those in the House and Senate Hearing rooms or something different. The question of whether to execute manual camera operations, such as done by the House and Senate, or automatic or voice-tracking is largely a function of staffing and budgets.

The PowerPoint and video presentations made in the Supreme Court Courtroom Chamber also need to be provided in a high-quality format to the video broadcast system. This will ensure that viewers would be able to see the visuals accompanying the presentation, not just the presenter and the reactions of the audience.

Lighting levels and color temperatures might need adjustment to optimize camera performance.

The video feed from the Supreme Court to the Judicial Center runs through the Senate Media control room, where the interface equipment is exposed to accidental contact (kicking) and has experienced several disconnections as a result of this arrangement. It has been requested that this equipment be relocated and made secure from accidental contact or damage.

5.4.3 Attorney General

If multimedia presentations are to be integrated with press conferences and other functions where video is being broadcast, then the optimal technology solution would be to have the presentation elements integrated with the lighting and video systems under a single control interface, such as the touch panels used in the House hearing rooms. Equipment should be similar in function and operation to equipment used by the AG office in other locations to minimize operator training needs.

5.5 House Television Services

There are some infrastructure issues with the existing facilities that merit attention. These were addressed in the survey submitted to Miller Dunwiddie by House Television Services.

A long-term need has been expressed by House Television Services for a production studio, possibly to be located in Room 317B. Converting this room into a proper video production studio facility would require lighting, HVAC, wall treatments/curtains, staffing and equipment changes. It is the intention of House Television Services to use this studio to produce programming that is in addition to the committee coverage that is currently produced.

Please also see "Expansion space Considerations - Television/Media Production Spaces".

5.6 Wireless Audio Systems

Two types of wireless audio systems are used in the Capitol's hearing rooms. The first type is **wireless microphones**. While the use of wireless microphones is commonplace in presentation and video production environments, there are two issues that need to be addressed from a technology perspective as systems are maintained or modified.

The first issue with wireless microphones is interference from other wireless microphones. This happens when a single receiver picks up two or more transmitters operating on the same frequency. With the number of groups using the Capitol building potentially growing and the separate media departments making individual purchasing decisions, *an overall plan for allocating frequencies is essential* to prevent interference and unintended (and potentially embarrassing) pickup and amplification in the wrong spaces and to the wrong audiences.

The second issue with wireless microphones is interference with other sources. A transmitting source does not need to be on the same frequency to cause interference problems. An 800-MHz receiver can be sensitive to interference from transmissions at 1600 MHz, 400 MHz, 200 MHz, 100 MHz, and so on. This means that other transmission sources such as security radios, radio dispatch centers, cell phones, walkie-talkies used by maintenance or construction crews, taxi radios, and other RF traffic can cause potential problems. In addition, some new DTV broadcast frequencies may cause interference with existing wireless frequencies, causing problems with systems that have worked satisfactorily until the DTV broadcasts begin.

The second type of wireless audio system used in the Capitol is **assistive listening systems**. These allow people with hearing impairment to be able to clearly hear the proceedings by having their own volume adjustment that does not affect the people next to them. They also can be used for tour groups. These systems fall into two general categories: RF and IR.

RF, or radio frequency system, rely on broadcasting on a frequency that can have interference problems caused by the factors listed above. The main strength of RF systems is that they work even when the user is seated behind a pillar or behind several rows of standing or seated audience members. RF systems are also susceptible to "snooping" by anyone with a handheld radio scanner. This is significant if a deliberative body is meeting in closed session and one of the members is using an RF assistive listening system, or the system is left on when nobody is listening. The entire proceedings are being broadcast up to a quarter mile away over the open airwaves for anyone to intercept.

IR systems, or infrared, rely on using invisible light to transmit the audio signal to the system user. The main difficulty with this type of system is that it operates on a line-of-sight basis from the emitter to the receiver. The spaces in the Capitol that have pillars or other obstructions make using IR a dicey proposition. Exterior windows and certain florescent light fixtures can also create problems with IR systems.

> *Recommendation*: The use of RF wireless microphones and assistive listening devices makes frequency spectrum allocation a critical part of any technology plans. All of the users of these systems within the building need to coordinate their equipment with those of Capitol Security, the IT departments of the various groups using the building, and any other group, organization, company, contractor, or entity that is broadcasting in the RF spectrum.

5.7 House Hearing Room Technology

It has been suggested that the newly renovated House hearing rooms in the State Office Building serve as models for deploying high-quality audio and video presentation technology for the Senate. In evaluating the design of any audio/visual system, several key questions need to be asked.

1. Can everyone hear each other?
2. Can everyone see each other?
3. Can everyone see the visual presentations?
4. Will the system be simple to operate?
5. Will the system be functional for an extended period of time?

My evaluation of these systems is based on examining the original plans and RFP, as well as a walkthrough with the Director of House Television Services.

Question One: "Can everyone hear each other?" There was no meeting in progress during my visits so this could not be judged. The provision and location of microphones indicates that thought has been given to picking up House members seated in the center of the horseshoe tables even when they are turned around in their seats. This is intended

to be accomplished by using hanging microphones. While this does not greatly affect the ability of the people in the room to hear, this provision ensures that the television broadcast feed includes those members that have turned in their seats.

In reality, this approach has proven to be unsatisfactory and is not recommended for future installations. In addition, the moveable gooseneck microphones have proven to be problematic by introducing a great deal of movement and handling noise into the broadcast signal. The problem is serious enough that House Television Services is investigating the option of reverting to the old "iron mounts", which consist of an immobile L-shaped bracket that hold the microphone in the face of the speaker.

Question Two: "Can everyone see each other?" The room layout of the House Hearing rooms, with the audience seated either in sloped seating on either side of the Representatives or in sloped seating in front of the members ensures excellent sightlines of the entire body. There are no substantial pillars or other obstructions such as are found in the current Senate hearing rooms. This is more of an architectural and room layout question than a technology one, although the installation of large projection screens can easily hinder sightlines in a large room.

Question Three: "Can everyone see the visual presentations?" The answer here is unequivocally "No". The primary means of image display in all but one of the rooms is via gas plasma monitors. These 42" diagonal monitors are less than 6" thick and have the wide screen 16:9 aspect, which gives them a futuristic appearance. This wide screen aspect, together with the "native" resolution of the displays, limits their ability to serve the function for which they were intended.

A 42" diagonal image in a 16:9 aspect ratio (width to height) is only 21" high. Since image height is the dimension most often correlated with calculating the effective distance between the screen and the viewer, this 21" dimension is extremely critical. It yields an effective viewing distance for meeting participants of average eyesight looking at PowerPoint-type graphics of approximately 10.5'. For extremely detailed images, such as spreadsheet information, this effective distance drops to 7'. In this space, the monitors are serving House members seated up to 20' or more away from the screens. Those who design future Senate Hearing room systems should strive to ensure that all of the displays are suitably sized and placed such that all Senators can clearly see the information being presented.

The second limitation of this display technology is the "native" resolution, or the actual number of pixels (picture elements) in the display. The monitors used by the House have a native resolution of 852x480. Most of the computers that will be used with this system have a native resolution of 800x600 (and in the future will increase to 1024x768 and higher). Because the computer input signal has a larger number of vertical pixels than can be displayed on the monitor, the monitor compresses the image by eliminating pixels. The eliminated pixels make the image less readable; for example, imagine a spreadsheet where a decimal point disappears, or an 8 becomes a 0. As computer display resolutions increase, the problems associated with image compression will grow. The distances over which the viewers are trying to see the monitors also exacerbates this problem.

It is also important to note that there are monitors provided for the audience to see the presentations in only one of the House hearing rooms. Serious thought should be given to allowing the audience and press to see the same images as the Senators, albeit perhaps on a more limited scale or size.

Question Four: "Will the system be easy to operate?" The House hearing room systems utilize an integrated control system that is operated by the presenter via a touch panel. This touch panel can simply command features and allow a single button press of an icon-labeled button to execute a multitude of commands to configure or reconfigure the audio and video system. Any system upgrades in the area of visual presentation undertaken by the Senate should have a similar integrated control system to that used by the House.

Question Five: "Will the system be functional for an extended period of time?" The particular choice of display technology in the House hearing rooms virtually guarantees that there will be problems with the gas plasma monitors within a year or two. Gas plasma technology is highly susceptible to a problem known as "burn-in", where a fixed image if left for a period of time (even as short as a weekend) will remain visible on the monitor, even when it is showing something else (or even turned off).

The red, green, causes burn-in and blue phosphors that create the image on a plasma monitor being activated in unequal amounts for extended periods of time. However, without proper equipment provision, training, and safeguards in place, burn-in will likely become noticeable within months and will become progressively worse throughout the life of the system.

House Television Services was made aware of this issue during the writing of this report and systems are shut down after every committee meeting. Another issue that has arisen is the lamp life of projection systems. Projection lamps typically last 1000-2000 hours before requiring replacement. Since replacement lamps are $400-$600 each, they should be budgeted for each year. In addition, because projection technology and models change so quickly from year-to-year, careful consideration should be given to purchasing a supply sufficient to last the estimated life of the projector, rather than hoping that lamps for a particular model are still available and affordable in 3-4 years (unlikely).

5.8 Multimedia Technology Infrastructure Checklist for Renovated or New Hearing Rooms:

1. All desks for meeting participants should have provision for microphone, data network, and power cables to the top of the desk.

2. Any large-screen projection systems should be rear-projection if possible. All projectors should have a data network connection to the nearest TC, in addition to the direct analog cables to the signal source equipment. Also, fiber and UTP cable should be provided alongside the analog cables for future digital signal transmission.

3. Sightlines to meeting participants for mounted cameras must be carefully considered when laying out rooms and furniture.

4. Lighting should be designed with a consistent color temperature of around 3200 degrees Kelvin. This will ensure optimal video camera performance.

5. All image displays should be sized according to the distance over which they are viewed and level of detail of the content contained therein.

6. Integrated control systems automate and simplify control functions, allowing presenters and meeting participants to focus on the issues at hand and not on running the technology.

7. Future digital technology must be anticipated when installing any permanent cabling.

8. Rooms with large display capabilities should be wired into the buildings broadband video system to serve as overflow seating for any of the other rooms or spaces.

9. ADA accessibility and provision for hearing-impaired and vision-impaired must be considered. This includes being able to reach and operate all of the technology equipment.

10. The sound system must achieve two goals: to amplify speaker's voices without loss of intelligibility or feedback while gathering the needed sound sources for broadcast and archival purposes.

5.9 Probable Costs for Hearing Rooms

5.9.1 Sound System

A properly engineered sound system of good quality for a hearing room should be budgeted for a **range of $20,000 to $40,000 per room**. The range is dependent on the installation conditions (new construction is less expensive to install than upgrade of existing) and the size of the room and the numbers of necessary microphones, speaker zones, and the amount of digital processing/mixing required.

5.9.2 Video Presentation System

The cost estimates for this type of system vary widely, as they are largely dependent on the type and number of displays (projectors and/or monitors) that are necessary, and whether these displays are only for the meeting participants or also for the audience. A basic video presentation system for participants-only should be budgeted for a range of $40,000-$60,000. Additional

monitors/projectors for audience coverage (depending on seating patterns) should be budgeted for $10,000 each, installed.

5.9.3 Integrated Control System

This is the equipment that allows operation of the sound and video systems to be made simple and intuitive through a graphical interface that automates room functions and equipment. A base system that operates all of the audio and video equipment should be budgeted for $20,000 to $30,000, including installation and programming. Options such as integrated lighting controls and motorized blinds for drapes would add to the costs of such as system.

5.9.4 Presentation Furniture

Presentation desks and mobile presentation technology carts should be budgeted to match the existing or planned furniture in the space. Between $5,000 and $20,000 should be budgeted for this purpose.

5.9.5 Hearing Room Probable Cost Summary

The total probable costs for audio and video technology for a single hearing room are between $85,000 and $150,000 or more, depending on the factors listed above.

5.10 Expansion Space Considerations

If a different space is designed to accommodate the hearing room functions for the Senate, there is some impact on the multimedia and video recommendations in this report.

5.10.1 Hearing Room Systems

The need has been expressed for a hearing room that would seat up to 600 people for meetings. The room would be dividable to accommodate two separate meetings, each with up to 300 people. Meetings would have up to 40 active participants (committee members and staff). Here are some of the technical considerations in designing a room of this scope:

1. **Sightlines**. To allow audience members to see the meeting participants, the meeting would have to be held on a dais, or the audience would have to be seated on a slope or stepped floor, or both.

2. **Sound System**. Each meeting participant would need to have a microphone that would provide adequate pickup. This is largely a function of microphone positioning (mount type, adjustability, user-control). The less the user can do

to move the microphone away, the better the pickup will be. Meeting participants will need sound reinforcement in order to clearly hear each other in a room of this size. Loudspeakers could be mounted in the desk or table to facilitate good sound for each participant. The overall room system would need to be carefully designed and configured to allow each side of the room to function independently or together as one integrated system.

3. **Visual Presentation System**. Due to the size of the image that would be required in a room of this size, rear-projection technology should be utilized for cost-effective coverage of the majority of seats. Other technologies, such as personal or group monitors might be used to cover specific groups of participants.

4. **Acoustical Separation**. Most moveable walls do a poor job of blocking sound. If a moveable wall were used between these two large spaces, it would itself be large. If this wall does not do an excellent job of blocking sound, only one side of the room will be usable at a time. All new hearing rooms should have significant attention paid to reducing the acoustical noise created by HVAC and adjacent spaces.

5. **Flexible Setup**. If the room will be configured in different ways, depending on the number of participants or audience members, then the wiring scheme for audio, video, multimedia, network, and power needs to be provided in flexible, easy-to-configure ways. This could be via floor boxes or accessible pathway under a raised dais. The interface between the structured cabling backbone and the user devices (microphones, video devices, etc) must be robust. This feature is often overlooked in designs of this type.

6. **Probable Costs**. Audio, Video, and Multimedia systems for a room of this type could exceed $500,000.00, depending on the sophistication, quality and quantity of the systems selected.

5.10.2 Television/Media Production Spaces

An expansion space in a different building would give House Television Services and Senate Media Services the space that they desperately need to design and build adequate production studio facilities for which each group has expressed need. All camera locations in the State Office building and Capitol would then be routed to these new production spaces, which would include control rooms, studios, workshop areas, editing/production, and storage/receiving areas.

While the infrastructure (HVAC, lighting, space) needs for each group would be similar, each group uses different equipment standards for video acquisition and storage. While the two groups could be physically close in the expansion space to allow for efficient cabling from the other buildings, they would each need their own spaces barring a significant change in the structure and operations of the video services groups.

Appendix A - List of State Personnel Interviewed

For the most part, interviews were conducted by telephone; however, four of the five consultants on this project did visit the Capitol building to view status of the technology systems.

This list is in no particular order and not all name spellings were verified.

Mr. Jim Greenwalt, Director Senate IS

Mr. Dale Good, IS Director, Supreme Court

Mr. Fred Gritner, Clerk of Appellate Courts

Mr. Michael Speiker, House IS staff

Mr. Dennis Kerns, Director of House IS

Mr. Jon Brimacomb, Governor's Office

Mr. Linc Starkey, automated systems, Department of Administration

Mr. Richard Finch, Attorney General's Office

Ms. Barb Neuman, InterTechnologies Group (DoA)

Mr. Don Davis, Rochester Post Bulletin newspaper

Ms. Kate Piva and Ms. Rose Sherman, Minnesota Historical Society

Mr. Brad Hofman (and Ms. Julie Talbot?), Plant Management

Mr. Steve Senyk, Director Senate Media Services

Mr. Philip Mednick, Senate Media Services

Mr. Barry LaGrave, House Television Services

Appendix B – Glossary

6 Glossary of Terms

Major Source: Newton's Telecom Dictionary, 8th Edition

ADSL (Asymmetrical Digital Subscriber Line): Term for a higher-bandwidth link to the business or home over twisted pair wiring already going to the location. The word asymmetric refers to the fact that this technology offers greater bandwidth from provider to user (downstream) and a smaller amount in the reverse direction (upstream).

Analog: Analog refers to the natural structure of information, specifically audio and video. Analog communications transmits voice and video at the different frequencies they are produced. Also - transmission of information through a continuously variable signal. Compare with digital.

Authentication: A process used to verify the identity of a user.

Automated Attendant: A device connected to a PBX. When a call comes in, this device answers it and says something like "Thanks for calling the ABC Company. If you know the extension number you'd like, push-button that extension now and you'll be transferred. If you don't know it, pushbutton "0" (zero) and wait a few seconds and the operator will come on. Or, wait and the operator will come on anyway." Sometimes the automated attendant might give you other options, such as, "dial 2" for a directory. Auto attendants are connected/integrated also to voice mail systems.

Automatic Call Distributor (ACD): A specialized phone system used for handling many incoming calls. An ACD performs four functions: (1) it will recognize and answer an incoming call; (2) it will look in its database for instructions on what to do with that call; (3) based on these instructions, it will send the call to a recording that "somebody will be with you soon, please don't hang up!" or to a voice response unit (VRU); and (4) it will send the call to an agent as soon as that operator has completed his/her previous call, and/or the caller has heard the message. The term Automatic Call Distributor comes from distributing the incoming calls in some logical pattern to a group of operators.

Backbone: The term backbone in the context of networking refers to the highest speed and widest bandwidth point of a communications circuit or path. In most cases all information central to the users is connected to the backbone such as shared databases or servers, with lower bandwidth circuits extending to user stations.

Bandwidth: The amount of data that can be carried by a circuit between two points of a network. Bandwidth is typically measured in Hertz (cycles per second) or kilobits per second or Megabits per second (shortened to Kbps and Mbps). The top speed of today's modems operates at 33.6 Kbps. One strand of fiber optics can carry 20,000,000,000 (20 Gigabits) or more (via wave division multiplexing). That 20 Gbps fiber optic strand can interconnect 357,000 telephone calls or carry 222 television channels. As examples of bandwidth, the following chart compares analog to digital bandwidth:

Device	Analog	Digital
Telephone	300-3,000 Hertz	56,000 Bits/Second
Television (broadcast)	30-3,500,000 Hertz	90,000,000 Bits/Second
Compressed Video	30-3,500,000 Hertz	56,000 - 1,544,000 Bits/Second

bit: Fundamental unit of information, occupying two discrete states (e.g., 0 or 1).

Bluetooth: A cable-replacement radio protocol for short distance (5-100 meter) networking at moderate speeds (1 Mbps raw bandwidth). Developed by the Bluetooth Consortium.

Bonding: Allows inverse multiplexers from different manufacturers to subdivide a wideband signal into multiple 56 or 64 Kbps channels, pass these individual channels over a switched digital network, and recombine them into a single high-speed signal at the receiving end.
bps: Bits per second. A measure of the speed of a transmission link.

Broadband Video: This term as used defines the capability of the network to carry numerous channels of television via one media, coax or fiber optics. Fiber optics can carry up to 110 television channels 20 miles while much lesser distances are possible with coax. Citywide cable systems carry broadband video.

byte: An 8 bit unit of data storage.

Cable: A collection of metallic wires or fibers surrounded by an insulator used to transmit information or carry power.

Call Accounting (also Call Detail Recording, Station Message Detail Recording): A device generally consisting of a computer, storage device and a means of attachment to the phone system to record and report information and statistics regarding call activity on the phone system. Generally used to provide information about call origination and reception within the telephone system.

Category 3 Cable: Rated 10 Mbps, medium speed LAN connectivity.

Category 5 Cable: Rated to 100 Mbps. A type of unshielded twisted pair (UTP) copper cabling that meets industry standards for use with voice and data installations. The cable must produce test results that will provide data transmission rates of up to 100 Mbps.

CATV - Community Antenna Television or Cable Television: CATV is a broadband transmission facility. It generally uses a 75-ohm coaxial cable and simultaneously carries many frequency-divided TV channels.

CDMA (Code Division Multiple Access): A spread-spectrum approach to digital transmission. With CDMA, each conversation is digitized and then tagged with a code. The process can be compared in some ways to an English-speaking person picking out in a crowded room of French speakers the only other person who is speaking English. See also Digital Modulation.

Central Office (CO): A term used by common carriers when referring to switching points. May also be called local exchange or telephone exchange. Contrast PBX.

Centrex Service: Central exchange service offered by a telephone company supplier. The switching between "in premises" communications is performed by a telephone company-owned remote switch.

Channel: A data communications path such as a wire, fiber-optic conductor, or broadcast frequency.

Channel Service Unit (CSU): The device used by customer premises equipment to terminate a telephone company-supplied digital transmission line.

CHAP: Challenge Handshake Authentication Protocol. A security measure used mostly in dial-up networks.

Character Generator (CG): This device offers a means of presenting graphical information (text and pictures) via a presentation device (monitor or projector) to the viewer. Many times the CG is used as a bulletin board for information.

CLEC: Competitive Local Exchange Carrier. A new entrant in a market previously limited to one carrier.

Client-Server: A computer network system in which programs and information reside on the server and clients connect to the server for network access.

Coaxial Cable: A cable composed of an insulated central conducting wire wrapped in another cylindrical conducting wire. It is usually wrapped in another layer and an outer protective layer and has the capacity to carry great quantities of information.

CODEC (Coder/Decoder): A CODEC is the device that converts analog based audio and video as produced by a microphone or camera to a digital signal from 56 Kbps to 90 Mbps that can be sent via digital signals across the street or around the world. A CODEC is then required to return the digital signal to analog for speaker and or a display device. Digital rates must match on each end of a connection.

Co-Location: The siting of two or more separate companies' (or departments') equipment in or on the same structure.

Compressed Video: Full motion video such as provided via broadcast television requires 90 Mbps of information to establish the detail and motion elements of a picture. Video can be transferred via lower bandwidth circuits if the number of bit is reduced via a compression device such as a CODEC. Rates of 36 Mbps, 1.5 Mbps, 384 Kbps, 128 Kbps and 56 Kbps are typical.

Compression: Reducing the size of data to be stored or transmitted in order to save transmission time, capacity, or storage space.

Connector: [1.] An attachment at the end of a wire or set of wires that facilitates their connection to a device. [2.] In a general sense, any attachment that facilitates connection.

C.O. Trunks: Also called CO Lines - These are the lines connecting the office to a local telephone company's Central Office which in turn connects to the nationwide telephone system.

CPE: Customer Premises Equipment. CPE is a term that has carried over from ordinary telephone service to refer to any equipment that is located past the point of demarcation. CPE may be a PBX, router, or other communications equipment.

CPU: The Central Processing Unit - The computing part of a computer. The "brain" of the computer. It manipulates data and processes instructions coming from software or a human operator.

CSU: Channel Service Unit. (See also DSU/CSU.)

dB: Decibel. 10 times the logarithm of the value in base 10. A measurement of either loudness or signal strength depending on the application.

Dial Up (or dial-up): The technique used to initiate a communications session over a common carrier switched transmission line. More commonly, the use of a standard telephone to create a telephone or data call.

DID: Direct Inward Dial - Offers the ability to from outside an enterprise to a distinct telephone station within the enterprise, without going through the telephone attendant.

digital: Transmission of information through a signal that can take on only certain discrete values (e.g., bits with values 0 or 1). Compare with analog.

Digital Video: Unlike analog video, digital video assigns a finite set of transmission levels.

Display Telephone: A telephone that incorporates a display, either and LED screen of LCD (liquid crystal display) that will show items like time and date and if subscribed, caller ID. On internal phone systems the display may show who is calling if it an internal call or if you have any messages waiting in voice mail.

DNS: Domain Name Server or Domain Name System - A distributed database system for translating computer names. DNS allows one to use the Internet without remembering long lists of numbers.

Drop Cable: In local area networks, the cable used to connect a device interface to the backbone network.

DS-0: Digital Signal, Level 0. DS-0 is the bandwidth required for one voice conversation. It is 64 Kbps and is one of 24 channels in a DS-1, or T1. (see also 56 Kbps)

DS-1: Digital Signal, Level 1. 24 DS-0's are required to make up one DS-1. (see also T-1)

DS-3 (Digital Signal, Level 3): A 44.736 Mbps carrier facility, (also referred to as a T3, and generally thought of as 45 Mbps), which is the equivalent of 28-T1 connections.

DSL: Digital Subscriber Line. See ADSL and HDSL.

DSLAM: DSL Access Multiplexer. Used to aggregate many DSL connections onto a single higher-bandwidth connection/link.

DSU/CSU (Digital Service Unit -Channel Service Unit): A DSU/CSU is used at both ends of a digital signal to filter, decode and equalize the digital signal to make it usable to the end user. Routers can be and are often used in place of a DSU/CSU at the customer location.

DTV (Digital TV): Many times DTV is referred to as HDTV or SDTV, although all of these terms define the change from analog television (as we now use) to digital.

DWDM: Dense Wavelength Division Multiplexing. A way of increasing the capacity of an optical fiber by simultaneously operating at more than one wavelength. With WDM you can multiplex signals by transmitting them at different wavelengths through the same fiber. See also WDM.

Dynamic Bandwidth Allocation: A technique used to allocate transmission channels only to devices that are transmitting. This helps makes the best use of the available bandwidth.

EIA: Electronics Industry Association. A Washington DC trade organization of manufacturers that sets standards for use by its member companies, conducts educational programs and lobbies in Washington for its members' collective prosperity. See also TIA.

EMC (Electromagnetic Compatibility): The ability of equipment or systems to be used in their intended environment within designed efficiency levels without causing or receiving degradation due to unintentional electromagnetic interference. Proper shielding of devices reduces interference.

EMI: Electromagnetic Interference.

Encryption: The transformation of data, for the purpose of privacy, into an unreadable format until reformatted with a decryption key.

Ethernet: A local area network (LAN) protocol using collision detection to resolve access contention.

Far-end Crosstalk (FEXT): The transfer of signals between conductors that then travel in the same direction as the signals, causing problems at the far end.

Fast Ethernet: A successor to the popular Ethernet LAN topology. Fast Ethernet is designed to run at 100 Million bits per second over the same Unshielded Twisted Pair cable as 10Mbps Ethernet. Fast Ethernet uses the same CSMA/CD as Ethernet.

FCC (Federal Communications Commission): The government agency responsible for regulating telecommunications in the United States.

FHSS (Frequency Hopping Spread Spectrum): A technique used in spread spectrum radio transmission systems, such as wireless LANs and some PCS cellular systems, that involves the conversion of a datastream into a stream of packets.

Fiber Loss: The energy loss in a light signal caused by its transmission through a fiber-optic medium.

Fiber Optics (FO): Optical fiber cable consists of multiple individual strands of glass fiber capable of carrying high-speed light pulses from one point to another. This cable comes in two

types, single mode and multimode, each with its own unique place in communications. Single mode FO cable is typically used where long distances and very high speeds are required, while multimode is used for intra-building communications and places where low speeds are required. Secondly, the bandwidth of single mode fiber is considerably larger than multimode.

Fishable walls: Walls with hollow cores that allow one to run cables inside them.

Fractional T-1: A T1 service whereby the customer leases a 128-, 256-, 384- or 512-Kbps channel that is part of a T1 transmission system owned by the telephone company.
Frequency: A measure of the energy, as one or more waves per second, in an electrical or light-wave information signal. A signal's frequency is stated in either cycles-per-second or Hertz (Hz). See also Hertz.

FTE: Full Time Equivalent. An FTE is equal to a full-time position, even though the hours may actually be filled by part-time employees.

FTP: File Transfer Protocol. In local area networking technology, file-sharing protocol that operates at layers 5 through 7 of the Open Systems Interconnection (OSI) model.

Gateway: The hardware or software product that allows access from one networked system environment to another. (This term is often used to describe a device that interconnects networks at any level.)

Gigabit: One thousand million bits. One billion bits. Or more precisely 1,073,741,824 bits.

Gigabit Ethernet (GigE): a variation on Ethernet wherein the maximum data transfer per link is 1,000 Mbps. Gigabit Ethernet requires a high-performing cabling system, such as Category 6 or fiber optic media. One can run GigE on certified Category 5e cabling for very short distances – within a room.

Guest voice mailbox: A mailbox that is not assigned to a telephone instrument.

GUI (Graphical User Interface): A name for any computer interface that substitutes graphics for characters. GUIs use pull-down menus and icons (representative pictures) to help the user accomplish specific tasks.

HDSL – High bit rate Digital Subscriber Line: A technology to put two-way, symmetric 1.5 Mbps on a normal unshielded, bridged (but not loaded) twisted pair without using repeaters.

HFC (Hybrid Fiber Coax): A wide area transport system consisting of a mixture of fiber optic and coaxial cabling. The fiber is used for longer runs and coax is used for the final connection to a house or business site.

Headend Room: This is a video term for the main distribution point for video.

Hertz: A measurement of electromagnetic energy, equivalent to one 'wave' or cycle per second. See also KHz, MHz, GHz.

Home run: Technology cabling installed in such a way that the individual cables run from each telephone, computer or video station directly back to the central equipment or switching location. Also known as "star" topology.

HTML (HyperText Markup Language): An authoring software language used on the Web. HTML is used to create Web pages and hyperlinks.

HTTP (HyperText Transfer Protocol): The protocol used by the Web server and the client browser to communicate and move documents around the Internet.

Hub: The electronic device through which data station connections are made to the network. The term hub has come to mean a shared media Ethernet device. Today most hubs have been or are being replaced by switches.

HVAC: Heating, Ventilating, and Air Conditioning systems. Due to high voltage and electromagnetic interference, telecommunication cables must be kept away from the motors in HVAC systems.

Hz: Cycles per second. A measure of radio frequency. See Hertz.

ICMP: Internet Control Message Protocol. Method for reporting errors and performing loopback testing on the Internet.

IEEE: Institute of Electrical and Electronic Engineers - a publishing and standards setting body responsible for many telecom and computing standards, including those standards used in LANs.

IETF: Internet Engineering Task Force. Standards setting body for the Internet.

ILEC: Incumbent Local Exchange Carrier. The former monopoly local telephone carrier. Contrast with CLEC.

Infrared: A band of the electromagnetic spectrum used for airwave communications and some fiber-optic transmission systems. Infrared is commonly used for short-range (up to 20 feet) through-the-air data transmission. Many PC devices have infrared ports, called Infrared Serial Data Link (IRDA), to synchronize with other devices. IRDA supports speeds up to 1.5 Mbps.

Inside Wiring: A term often used in place of customer premises wiring. It refers to cabling placed within a building.

Intercom: Part of the function of some PBX systems that provides station-to-station communications using the telephone speaker.

Interface: A connection between two network elements. Compare with Protocol.

Internet Protocol (IP): A network layer protocol developed in conjunction with the Transmission Control Protocol (operating at the transport layer). See TCP/IP.

Interoperability: The process whereby computers can operate interactively with each other across a network without data conversion or human intervention.

Intranet: An internal network, which is private or employs a firewall to secure it from outside access, that supports Internet technology. The Intranet is used for inter-company communications and can be accessed only by authorized users.

IP (Internet Protocol): See TCP/IP.

IP Address: The IP address is a 32-bit address used in IP routing, which includes a network address identifier assigned by a central authority and a Host ID (an end station identifier assigned by the LAN administrator).

IPSec: Encryption protocol for tunneling IP communications over the Internet.

IPX: Internetwork Packet Exchange protocol. Novell NetWare's native LAN communications protocol. Has fallen out of favor due to its "chatty" nature, wherein devices report their availability on a periodic basis.

ISDN: Integrated Services Digital Network (ISDN). A type of network that transfers all information from source to destination in a digital form. ISDN comes in two different capacities: BRI - Basic Rate Interface - which is 144,000 bps and PRI - Primary Rate Interface - equivalent to a T1 (1.5436 Mbps). ISDN is divided into bearer or B-channels and data or D-channels. In BRI ISDN is composed of 2B+D, the two bearer channels are 64 Kbps used to carrier user data or one voice conversation and one 16 Kbps for control and signaling information, it also can be used to carry user data up to 9600 bps.

ISM Band (Industrial Scientific Medical Band): Frequency bands in the radio spectrum that are unlicensed, meaning they can be used for a variety of applications without the requirement for FCC permission. The bands are used traditionally for in-building and system applications such as bar code scanners and wireless LANs. Because there is no licensing requirement, there exists the potential for interference. Therefore, spread spectrum technology is often used to protect the integrity of data transmission.

ISO: International Organization for Standardization; an international standards-setting organization.

ISP: Internet Service Provider

ITU – International Telecommunications Union: An organization established by the United Nations. The ITU's objective is to set telecommunications standards, allocate frequencies to various users and hold trade shows every four years. ITU-T has replaced the CCITT as the world's telecommunications standards organization.
IXC (Interexchange Carrier): A long-distance phone company.

JPEG: Joint Photographic Experts Group.

Kbps: Kilobits per second. See bps.

Key System (Key Telephone System): Telephone system where users only have to push one of the multiple buttons on the telephone to access a central office phone line. With this system you don't have to dial 9 to access a line as is common in PBX systems. A drawback is fewer features and a larger phone on the user's desk.

KHz (KiloHertz - Thousands of Hertz): See also Hertz, MHz, GHz.

LAN (Local Area Network): A data communications network, typically within a building or campus, to link computers and peripheral devices under some form of standard control.

LCD – Liquid Crystal Display: An alphanumeric display using liquid crystal sealed between two pieces of glass. LCD displays provide information to the user of a telephone instrument or to the screen of a laptop computer.
LEC (Local Exchange Carrier): Wireline carrier for local calls. Also see ILEC and CLEC.

Leased Line Services: These are typically voice, video or data communications circuits provide by a telephone company or cable company and leased for a cost per month to a customer such as a city or school district. Typical lease lines include 56 Kbps, ISDN, T-1, and DS-3.

Line-of-Sight Transmission: Transmission limited to straight lines. Examples are microwave and laser.

Link Redundancy: The ratio of the actual number of links between nodes in a network and the minimum number that would be required to ensure that any node could transmit to any other node. This ratio is a measure of alternate routing availability.

Load Balancing: The process whereby multiple service units are used equally. For example, if two communications lines are available between two points, each carries half of the traffic load.

Loss: The reduction of transmission signal strength.

MAC: Medium Access Control.

MAC address: In Ethernet the MAC address is a specific alphanumeric sequence that is unique to each device, and is "burned on" when that device or interface is manufactured. For example, every Ethernet network interface card (NIC) has a unique MAC address. The initial characters identify the manufacturer.

MAN (Metropolitan Area Network): A network covering a larger area than a Local Area Network (LAN) and less than a Wide Area Network (WAN). Typically, a MAN connects two or more LANs. In addition to data, a MAN may also carry voice, video, image and multimedia. This is generally a higher speed connection than a WAN and can use various access methods, although fiber is the most common transport medium.

Mbps: MegaBits Per Second - Million bits per second.

MC (Main Cross-Connect or Main Closet): The central location in a building out from which voice, video and/or data cabling is run. This term is most commonly used in data networks. This room/space may also house electronics. May or may not be collocated with the Main Distribution Frame (MDF).

MCU (Multichannel Control Unit): The MCU is a device used to support the interconnection of multiple compressed video CODEC input/output lines. The MCU establishes an automatic switcher device that sends the active video from the send unit to all other connected devices. Audio is handled as a bridge with the video following the audio as the switching source. An MCU can handle multiple inputs and can typically be cross connected with other MCUs to increase the number of video conference sites.

MDF: Main Distribution Frame - This is a Telco term usually where the PBX is located and is the central wire distribution for the voice system. Efforts should be given to be able to locate wiring closet in this room as well as the video headend equipment.

Media: This term is used specifically to describe the various methods of transporting communications signals, including fiber optics, copper cable, coaxial cable and/or radio systems such as spread spectrum or microwave.

Megabyte: One million eight-bit bytes.

MEGACO: Media Gateway Control – IETF Working Group.

Message Alert: A light or other indicator on a wireless phone that notifies a user that a call has come in. A useful feature especially if the wireless subscriber has voice mail. Also called a 'call-in-absence' indicator.

Messaging Waiting Indicators: An indicator on a telephone to let user know that there is a message waiting with either an operator or voice mail system for them. Commonly the indicator is a light as in hotels or it could be a text message on a display phone.

MHz (MegaHertz): Millions of Hertz. See also Hertz, KHz, GHz.

Microsoft NT: Also known as Windows NT. It is a computer operating system.

MMF: Multimode fiber optic cable.

Modem: Modem, which is short for Modulator/Demodulator is a device that is used to convert the digital signal which the computer requires to an analog signal that can be transmitted over the voice phone line (analog line) and vice-versa.

Modulation: The process of varying some characteristic of the electrical carrier wave.

MPEG: Motion Picture Experts Group. This organization has created several industry standards for compression used for audio and video.

MTSO (Mobile Telephone Switching Office): The central computer that connects a wireless phone call to the public telephone network. The MTSO controls the entire system's operations, including call monitoring, billing, and hand-offs.

Multi-line Telephone: A telephone set used to access the Key Telephone System. It will have buttons on the face to access the outside lines.

Multimedia: This word refers to the use of audio and video as interfaced with digital technology for sending-receiving or storing-retrieving of images, moving pictures or sound.

Multi-mode (or multimode) fiber: An optical fiber that will allow nonaxial rays or modes to be carried through the fiber core. Multi-mode optical fibers have a much larger core diameter than single-mode fiber, and consequently a lower bandwidth capacity.

Multiplexing: [1.] A process whereby more than one low-speed communications device uses one high-speed transmission line. [2.] A process whereby any number of entities can be made to use a single entity.

MUX: Multiplexer.

Network Interface: The interface between a network and a computational device. An example is an Ethernet or IEEE 802.3 controller, which interfaces a specific computer or other device to an Ethernet or IEEE 802.3 local area network.

Network Layer: This layer of network architecture is responsible for choosing routes or circuits for transmission and packet-switching decisions. Also known as Layer 3 in the OSI model.

Network Management Software (or System): The software that manages and controls network functions within a network. It can sometimes facilitate problem determination.

Network Operations Center: The physical location from which the operational functions of a network are controlled. May also be called network control center.
Network (Protocol) Analyzer: A device designed to monitor the functions of individual protocols or multiple protocols in complete networks and provide performance and maintenance data.

Network Redundancy: In a network, the state of having more connecting links than the minimum required to provide a connecting path between all nodes.

Network Topology: The physical relationships between devices in a network. An example is the ring topology, in which all devices are connected in a physical ring.

Network Traffic: The total amount of data transferred over a network at some period of time.

NIST: US National Institute of Standards and Technology.

NOS: Network Operating System - The software side of a LAN. The program that controls the operation of a network.

NTSC – National Television Standards Committee: Committee of Electronic Industries Association (EIA) that prepares the standard specifications approved by the Federal Communications Commission for commercial broadcasting.
OC-3: SONET service at 155 Mbit/sec.

OC-12: SONET service at 622 Mbit/sec.

OC-48: SONET service at 2,488 Mbit/sec.

OC-192: SONET service at 9,953 Mbit/sec.

Operating System: A software program that manages the basic operations of a computer system. These operations include memory apportionment, the order and method of handling tasks, flow of information into and out of the main processor and to peripherals, etc.

OPX (Off Premise Extension): OPX is often a feature of a PBX to allow a person to have an extension away from the location where the PBX is. An outgoing line is used to give someone at a remote site or home access to the features of a PBX.

OSI: Open Systems Interconnection. The OSI model created by the International Standards Organization describes a set of seven layers for networking.

Overhead Paging: A system sometimes used as an adjunct to a telephone system. Provides broadcast or announcement through wired ceiling-mounted speakers and wall-mounted horns, powered by a paging amplifier.

Packet: A bundle of data organized in a specific way for transmission. The three principal elements of a packet include the header, the text, and the trailer (error detection and correction bits).

Packet switching: Sending data in packets through a network to some remote location. The data to be sent is subdivided into individual packets of data, each packet having a unique identification and each carrying its own destination address.

Paging: The function of transmitting a message to someone whom is at an unknown location, using one of several methods.

PAP: Password Authentication Protocol. A method of ensuring the end user is genuine. See also CHAP.

Path: Any possible route within a network.

PBX (Private Branch Exchange): A PBX is a CPE device that the customer more than likely owns, although some are leased. This allows service to many internal phone lines with relatively few outside phone lines. PBX owners can choose options they would like on their system, like ring again or call park/forward rather than ordering them through the local exchange carrier as in a Centrex system.

PC Card: The new name for PCMCIA cards (see definition). A small, credit-card sized device, compatible with the PCMCIA PC Card Standard, that packages for memory and input/output.

PCMCIA (Personal Computer Memory Card International Association): A standards body that sets the standards for PC cards.

PDA (Personal Digital Assistant): Portable computing devices capable of transmitting data. These devices make possible services such as paging, data messaging, electronic mail, stock quotations, handwriting recognition, personal computing, facsimile, date book, and other information-handling capabilities.

PHY: Physical Layer. Layer 1 of the OSI model.

Physical Layer: The layer in a layered network architecture, such as the International Standards Organization's Open System Interconnect (OSI) seven-layer model, that is responsible for the transmission of bits across the medium.

PIM (Personal Information Manager): Also known as a 'contact manager,' is a form of software that logs personal and business information, such as contacts, appointments, lists, notes, occasions, etc.

PIN: Personal Identification Number. Used to restrict access to personal services or capabilities.

PKE: Public Key Encryption. A security method whereby information is encrypted (scrambled) before it is sent.

Plenum cable: Cable specifically designed for use in a plenum (the space above a suspended ceiling used to circulate air back to the general living or work space via the building heating or cooling system). Plenum rated cable is far more fire-retardant than PVC cable.

POP: Point of Presence. This is where the main service of a telephone provider or video cable (CATV) comes from. See also MPOP.

POTS (Plain Old Telephone System): This refers to an unenhanced telephone service, where the only features are being able to send and receive phone calls. Features like call waiting and call forward are present on this system.

PRI: Primary Rate Interface (1.544 Mbps). See also ISDN.

Proprietary: Something that will only work with one vendor's equipment or software. Many telephones are proprietary to one telephone system or one manufacturer.

Protocol: A procedure for adding order to the exchange of data. It is a specific set of rules, procedures or conventions relating to format and timing of data transmission between two devices.

PSTN: Public Switched Telephone Network (utilizing R1 MF tone interfaces).

PVC: Permanent Virtual Circuit. Used in Frame Relay networks.

PVC: Polyvinyl chloride. Material used as a sheath in the manufacture of technology cabling.

QOS/QoS: Quality of Service. Refers to attempting to ensure that high-priority information or transmissions are sent and arrive before low-priority transmissions. Or that traffic that needs to arrive in real-time does so with as little interruption as possible.

Raceway: Metal or plastic channel used for loosely holding electrical and telephone wires in buildings. It is usually located in the floor and is encased on three or four sides by concrete.

RADIUS: Remote Authentication Dial-In User Service. Used to authenticate (or validate the identity of) users. May be used on LANs and WANs as well as dial-up networks.

RAM: Random Access Memory - The primary memory in a computer.

Response Time: [1.] In computer systems, the time required for a computer to provide output after receiving input. [2.] In network applications, response time may refer to the time required for a network to respond to a request for service.

RF: Radio frequency. Electromagnetic waves operating between 10 kHz and 3 MHz propagated without guide (wire or cable) in free space.

RGB Video: A color model based on the mixing of red, green, and blue – the primary additive colors used by color monitor displays and TVs. Typically these colors are merged together as a composite signal, but for maximum quality and for computer applications the signals are segregated.

Roaming: The ability to use a wireless phone to make and receive calls in places outside one's home calling area.

Router: A device that performs routing functions - possibly altering physical data link and network layer protocols - within a network or between dissimilar networks.

66-Blocks: Punchdown blocks most commonly used to terminate 25-pair cables.

S-Video: Type of video signal used in Hi8, S-VHS, and some laserdisc formats. It transmits luminous and color portions separately using multiple wires. S-video avoids composite video encoding, such as NTSC and the resulting loss of picture quality.
SDSL: Symmetric DSL.

Single-mode (or single mode) fiber: Fiber optic cable designed to carry only the single wavelength selected for transmission. Most commonly 9 microns in diameter.

Smart Card: A credit card-sized card with a microprocessor and memory.

SMF: Single Mode Fiber.

SNMP: Simple Network Management Protocol. A standards-based approach to managing network devices such as switches.
SONET (Synchronous Optical NETwork): SONET is an optical network used to transport many unique digital signals (ATM, T1, etc.) over the same optical carrier. Its physical interface is the OC, (Optical Carrier) which has a base rate of OC-1, or 51.84 Mbps and continues to as high as the theoretical limit of 13 Gbps.

Spread Spectrum: A modulation technique in which the information content is spread over a wider bandwidth than the frequency range of the original signal.

SSL: Secure Socket Layer. One method used to secure web-based transactions.

Standalone: Any device that can perform independently of something else.

Switched Ethernet: An Ethernet environment that utilizes switches to segment the network. Switches function similar to that of a bridge. Fully switched networks have no collision problems; this increases the performance of the network.

Synchronization: Also known as 'replication,' it is the process of uploading and downloading information from two or more data sources, so that each is identical.

Synchronous: Data that is transmitted as a regular, precisely clocked, stream of bits. A pattern of bits is used as a filler for times when there is no data to transmit. Compare with Asynchronous.

10Base-T: A transmission medium specified by IEEE 802.3 that carries information at 10 Mbps in baseband form using twisted-pair conductors.

T1 (DS1): In the United States this T1 standard has a speed of 1.544 Mbps. The T1 standard has carried over to data networking from the voice arena where it was used to describe a carrier that could carry 24 voice conversations over a clear channel (64 Kbps, DS0).

TC - Telecommunications (or Technology) Closet: a physical space where voice, data and/or video cabling is aggregated. May also contain equipment such as telephone switch equipment or data network electronics. The TIA/EIA provides guidelines for TC design.

TCP/IP (Transmission Control Protocol/Internet Protocol): The standard set of protocols used by the Internet for transferring information between computers, handsets, and other devices across many kinds of networks, including unreliable ones and connected to dissimilar LANs.

Telephone paging: Part of the function of some telephone systems. Enables broadcasting/announcements over several or all telephone speakers.

TIA: Telecommunications Industry Association.

TIA/EIA: A prefix for a standard produced by the TIA in association with the EIA.

Transceiver: [1.] In IEEE 802.3 networks, the attachment hardware connecting the controller interface to the transmission cable. The transceiver contains the carrier-sense logic, the transmit/receive logic and the collision-detect logic. [2.] Any device that both transmits and receives.

Trunk: A communication line between two switching systems. The term switching system typically includes equipment in a central office (the telephone company) and PBXs.

TTY: A device used by the deaf or hearing-impaired to communicate text messages over telephone systems. It runs at 45.45 bps.

Tunneling: Sending data transparently through a foreign network. Usually implies the use of a larger than optimal number of protocol layers.

UDP: User Datagram Protocol. An Internet protocol providing basic services only. Compare with TCP.

Unified Messaging: *Generally, a system or group of systems that bring the various forms of messaging (voice mail, facsimile, e-mail) to one point of retrieval for the end user.*

UTP: Unshielded Twisted Pair cable.

UPS: Uninterruptible Power Supply - A device providing a steady source of electric energy to a piece of equipment, enabling electronic systems to function despite periodic commercial power spikes, brownouts or failures.

Upstream: From the user back to the provider.

Video Headend: The originating point of a signal in TV cable distribution systems. Video editing and other electronic equipment is generally found at the headend.

Video Streaming: Video streaming allows high quality video and audio to be transported efficiently over broadband networks, optimizing bandwidth and enabling video services and applications via an organization-wide computer network.

Voice Mail: A computerized answering service that answers a call, plays a greeting, and records a message. Depending on the sophistication of the service, it also can notify the subscriber, via pager, that he or she has received a call. Also called voice messaging.

Voice Messaging: A generic term that can typically be divided in four major ways: (1) Voice Mail, where messages can be retrieved and played back at any time from a user's "voice mailbox"; (2) Call Answering, which routes calls made to a busy/no answer extension into a voice mailbox; (3) Call Processing, which lets callers route themselves among destinations via their touch-tone phones; and (4) Information Mailbox, which stores general recorded information for callers to hear.

Voice Response Unit (VRU)--also referred to as Interactive Voice Response (IVR): Think of a Voice Response Unit as a voice computer. Where a computer has a keyboard for entering information, a VRU uses remote touch-tone telephones. Where a computer has a screen for showing the results, a VRU uses a digitized synthesized voice to "read" the screen to the distant caller. A VRU can do whatever a computer can, from looking up timetables to moving calls around an automated call distributor (ACD). The only limitation on a VRU is that you can't present as many alternatives on a phone as you can on a screen.

VOIP (Voice Over IP): Voice traffic is digitized and compressed so it may be transmitted over an IP network. Requires a network with low latency (delay.)

VPN: Virtual Private Network.

WAN (Wide Area Network): A Wide Area Network is used to extend LAN connectivity beyond a building or campus, usually through common carrier facilities at either 1.544-Mbps or 56-Kbps. See LAN and MAN.

WDM: Optical Wavelength Division Multiplexing. Divides the signal over fiber optic cabling into multiple colors of light to allow more than one signal to be sent simultaneously over the same single fiber.

Wireless: Describing radio-based systems that allow transmission of telephone and/or data signals through the air without a physical connection, such as a metal wire or fiber optic cable.

Wiring Closet: This is a data distribution point for cabling systems. Network equipment is often also located here. See also MC and TC.

XDSL: Refers to all the DSL variants, e.g. ADSL, SDSL.

Information Technology Plan

For

Capital Building/Relocation Funding Request

Minnesota State Capitol
Predesign Study

Date Prepared: June 13, 2001

Prepared By: **Miller Dunwiddie Associates**
Heidi Y. Granke, 612.278.7756, hgranke@millerdunwiddie.com
Elert & Associates
Wendy Chretien, 651.705.1227, chretienw@elert.com

Table of Contents

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INFORMATION TECHNOLOGY PLAN REQUIREMENTS

The Minnesota Office of Technology (OT) is required to review and approve state agency information technology plans before agency requests for office space are submitted to the legislature.

This information technology plan is being submitted to the Office of Technology to fulfill those requirements. **A copy of the OT approval memo will be included in the predesign package or the relocation request document when the OT review is complete and an approval memo is received from OT.**

Introductory Remarks

Components of the Information Technology Plan

The following six requirements are addressed within this information technology plan:

1. One-page building or relocation summary
2. Description of executive leadership
3. Description of the telecommunications network
4. Description of information resource technologies
5. Implementation plan
6. High-level technology model

1. One-page building or relocation summary

In 1984, Miller-Dunwiddie-Associates was retained by the Capitol Area Architectural and Planning Board (CAAPB) to prepare a study of the public and ceremonial spaces of the Minnesota State Capitol Building. This report, *Minnesota State Capitol: a Preservation and Planning Study for Public and Ceremonial Areas*, was the first step toward an inventory the historic characteristics of the building and the first step toward a comprehensive preservation plan.

In 1988, Miller-Dunwiddie-Associates, again under the direction of the CAAPB, prepared the report: *Minnesota State Capitol: A Comprehensive Preservation Plan and Implementation Strategy*. This report provided a complete inventory of the historic materials in the building, reviewed the architectural, structural, mechanical and electrical systems, and laid out a strategy for implementation and completion of the restoration work by 1994. This plan has been the basis for the work that has been completed at the Capitol between then and now, however, a large portion of the restoration work has yet to be completed.

It, therefore, became clear that the restoration and renovation schedule and master plan needed to be reviewed. The previous studies carefully reviewed the historic, structural, mechanical and electrical issues in the building. They did not attempt to review the needs of the building users.

The primary reason for this predesign study is to propose a plan for the "restoration of the remaining areas of the Capitol", as stated in the budget appropriation. In order to do this, it was necessary to first understand how the building is used by the public and the tenants. This predesign is really a predesign for a master plan, not a specific detailed project. Therefore, we were not able to review and include as much detail as most predesign studies would.

After reviewing the tenant and public needs information, it became apparent that the Capitol cannot meet the needs for public hearing spaces. Large hearing rooms are needed to accommodate the public, but there is not a practical, feasible way to provide these large rooms in the Capitol. This is due to the short beam spans and the large number of columns in the building. There is also a need for additional office space and small meeting rooms within the office areas. There is not adequate expansion space in the Capitol to provide these office and meeting spaces. Also, east wing ground floor public corridor is currently being used as office space. For fire safety and historic reasons, this space needs to be returned to a public corridor.

Because there is not enough space in the Capitol to meet the tenant needs, additional spaceneeds to be found for some of the tenants outside of the Capitol. There are two possibilities for this space. The first alternate is to find existing space on the Capitol Complex. Because there is very little vacant space on the Capitol Complex, this will probably require the relocation of some other Capitol Complex tenants into other space off of the Complex. Additional lease space would need to be found for them.

The second alternate is to build a new building on the Capitol Complex. *The Comprehensive Plan for the Minnesota State Capitol Area* identifies Capitol complex potential development sites. The site closest to the Capitol, and therefore the most desirable to current Capitol tenants, is the block to the northeast of the Capitol, which is now parking lot "B".

It is beyond the scope of this predesign to determine which of these alternates will be the best route. A separate predesign, which reviews the other needs for space on the Capitol Complex, is needed.

2. Description of Executive Leadership

Because of the complexity and diversity of this project, three groups were set up to review, guide and facilitate the predesign process.

A **steering group** guided the procedure of the predesign process and was made up of:

- Department of Administration – Kath Ouska
- Division of State Building Construction - Richard Cottle, Wes Chapman, Gordon Christofferson
- Capitol Area Architectural and Planning Board - Nancy Stark , Paul Mandell

An **advisory group** reviewed and verified the predesign findings and recommendations, including prioritizing the work and helping define the needs for the public spaces. It was made up of:

- Governor's Office – Paula Brown
- Senate – Senator Dennis Fredrickson, Senator Len Price, Senator Deanna Weiner, Patrick Flahaven, Jim Greenwalt, Sven Lindquist, Peter Wattson, Kathleen Lonergan, Kevin Lundeen
- House of Representatives – Gail Romanowski, Don Crosby, Matt Hughes, Barbara Thomas

- Minnesota Historical Society – Charles Nelson, Carolyn Kompelien, David Kelliher
- Capitol Area Architectural and Planning Board – Nancy Stark, Paul Mandell
- Department of Administration – Kath Ouska
  - Division of State Building Construction – Richard Cottle, Wes Chapman
  - Plant Management Division – Gordon Specht, Brad Hoffman
- Department of Finance – Lorna Smith

A **tenants' group** was asked to serve as the contacts for gathering information from the tenant groups and was made up of:

- Attorney General's Executive Office – Rebecca Spartz
- Capitol Café – Chaz LeGreca
- Capitol Security – Lt. Alesia Metry
- Council on Disability – Margot Imdieke
- Governor's Office – Paula Brown, Andy Lokken
- House of Representatives – Gail Romanowski, Don Crosby
- Minnesota Historical Society – Carolyn Kompelien
- Plant Management Division – Gordon Specht
- Press Corps – Don Davis (Rochester Post-Bulletin)
- Senate – Sven Lindquist, Peter Wattson, Dan Wolf, Jim Greenwalt
- State Services for the Blind – Steve Adair
- Supreme Court – Judy Rehak
- Real Estate Management Division – Nancy Freeman
- Capitol Area Architectural and Planning Board – Nancy Stark, Paul Mandell

3. Description of the Telecommunications Network

Current and future business communications needs

We've included information about the various tenants' current uses and needs for technology:

Senate - The Senate upgraded its infrastructure cabling for voice and data in 1998, and added or upgraded data network equipment at the same time. The core device for the Senate network is located in the main computer equipment room G3. From there, fiber optic cabling connects to the MPOP, and from there it is distributed via fiber to multiple Telecommunications Closets throughout the Senate areas of the building. End user ports are mostly 100 Mbps switched Ethernet, but there are also a few shared hubs in specific locations. There are UPS systems in each closet that houses Senate data equipment.

House - The House IS group supports 30 desktop computer systems at the Capitol building as well as 134 laptops carried by House members. Those laptops are frequently used in the House chamber (floor). Three of the Technology Closets in the building contain the network equipment for the House. The backbone among these closets is 100 Mbps over fiber. Each of the closets houses at least one switch and from 3-12 hubs for end user ports, depending on end user needs (the 12 hub configuration serves the House

Chamber and surrounding spaces.) Switches are new within the year, while the hubs are up to five years old. The IS group intends to replace all hubs as soon as possible.

Legislative video technologies – both analog ("normal") and network-based (streaming) are important to both the House and the Senate. Video/audio is broadcast (or multicast as the case may be) within the building and to adjacent office buildings so legislators can follow what is going on in various hearing rooms, etc. without being physically present. This helps reduce the need for space in the Capitol building itself.

A fiber optic feed from the Senate video control room to InterTech, allows the distribution of unicast and multicast streaming video (video over the Internet) to be used when desired.

Note: increasing use of streaming video would place heavy demands on the current data networks.

Revisor of Statutes - The Revisor's office has a network that uses a combination of two 155 Mbps ATM links to connect to the State Office Building, and multiple 100 Mbps Fast Ethernet to connect to Technology Closets within the Capitol building. It uses some of the multimode fiber in the backbone to connect switches in five different closets. All end-user ports are 10/100 switched Ethernet.

This network should be usable for another two years or so, after which the electronic components will begin to require replacement. At that time, the likely needs will continue to be 100 Mbps at the desktop, but with greater bandwidth in the backbone. The probable technology to use at that point would be either Gigabit Ethernet or its upcoming big brother 10 Gigabit Ethernet.

The House, Senate and Revisor of Statutes Offices share an Internet link via InterTech.

Governor's Office - This office has a rather surprisingly large number of network ports – 96. Network cabling is sufficient to the current needs for the office areas. There is no cabling in the public areas due to a need to preserve the historic aspect. If networking were required in those spaces in the future, it may be possible to use an 802.11 wireless data system with the access point located in one of the adjacent office areas.

The connection to the outside world is a 384 Kbps channel out of a fiber connection to InterTech.

This office has three Windows NT-based servers running email, an advanced constituent database, and a web based front-end for that database.

This office used the InterTech connection to provide a streaming video version of last year's State of the State address.

Attorney General's Office – This office needs to connect to the 525 Park Building where most of the rest of its staff reside. The AGO owns a firewall and router, which currently are located at the Capitol and attach to an InterTech router in B18. AGO intends to move these systems to its 525 Park office building, and connect via a new 24-strand fiber cable back to the State Capitol building (this fiber is planned, but not yet installed.) After the fiber is put in place, the Internet connection would be moved either to the DOT building or the Centennial Office building. Thus, the AGO TC at the Capitol would essentially be just another technology closet from the 525 Park building.

Future AGO technology uses may include streaming video for training and/or orientation purposes, and Voice over IP (VoIP.) Based on the planned network, implementing either or both of these should be quite feasible.

Media - For competitive reasons, it would be unlikely for the various media tenants to cooperate on a shared network infrastructure, thus an outsourced solution such as DSL is a good option.

For this reason, the Senate IS department recently informed media users of the cost and means to obtain Digital Subscriber Line (DSL) services for Internet connectivity. This would use existing phone wiring and thus not require new network cabling. The benefit is faster Internet access (from 128 Kbps to 1,540 Kbps, depending on cabling facilities and what the tenants are willing to pay.)

Please note however, that if the Media area were moved or renovated, we do recommend local (in-building) data cabling be installed, which could then be leased to the various tenants, as needed. Each media tenant could then provide its own switch or hub for internal connectivity.

Capitol Security/Department of Administration - Linc Starkey who is an employee of the Department of Administration, but is stationed in the Capitol Security area, oversees all of the computerized automation systems for the Capitol building. These include the automated fire management system, heating/ventilation/air conditioning (HVAC) system, and access control (door locks/security systems.)

These automated systems are set up as separate networks for reliability and security reasons. These systems do not require interfaces to other networks in the Capitol. Each runs mostly on fiber optic cabling. New proximity readers are being installed for door access control – these same systems are used throughout the Capitol complex. Tenants' ID cards include programmed information as to which doors those users are allowed to open.

Mr. Starkey requested that in any renovation in the building, his group be consulted as to pathways for fiber cabling for automated systems.

With regard to Capitol Security/Public Safety as in internal building tenant, that group

just moved to a newly renovated area. That space has network cabling that meets all current standards.

Minnesota Historical Society - Currently MHS has three networked users in the building. These are connected back the main MHS facility via an ISDN line from InterTech. To provide the best possible throughput, users have access to some internal applications via Citrix MetaFrame.

The network needs for MHS would increase greatly if more of the building were to be used for ceremonial and exhibit areas. Potential FTEs would increase from 4.3 (plus 21 site guides) to 10.75, plus additional resale clerks, volunteers (15) and site guides (30 – currently 15.) It is difficult to predict all the new data needs for this organization due to the unknowns about space. Certainly some cabling and network ports would be needed for any new cash register (point of sale) systems, as well as to any additional stationary desk/office areas.

Judicial - The Supreme Court area in the Capitol does not currently include any data networking capabilities. However, a future request is for network connections at the Bench, the Counsel tables, and the center lectern. Due to the physical nature of the room, the only viable option for this space is wireless networking.

There is a desire in the fairly near future to be able to allow presentation of evidence via PowerPoint presentations and similar technologies. This would not typically require a network connection, but can be done as a stand-alone system.

Telecommunications Network

While each of the building tenants do have some differing needs, their overall needs for networking are very similar. Each requires fast internal links within their departments as well as quick, reliable access to areas outside the building.

Based on the tenants' needs, we recommend a fiber optic based backbone of both multimode and single mode fiber throughout the building linking the various secondary technology closets to a main closet. End user physical links would be either Category 5e or fiber (see section below.)

The voice, data and video cabling system should be considered an integral part of the building, and thus should be managed by a single entity, which is not now the case.

We recommend that network electronics consist of 10/100 Ethernet at the user desktop, with backbone links of at least 100 Mbps, but better at 1 Gigabit.

To ensure the necessary quality of service (QoS) on the network to carry streaming video, videoconferencing, and voice/audio over the network, we suggest a careful review of the available QoS technologies about a year prior to the necessary installations.

In preparation for the renovations, we suggest that each of the tenant's Information Systems departments more thoroughly document its own network.

4. Description of Information Resource Technologies

Due to the preliminary nature of this study and the large number of tenant groups, we were unable to speak to each in depth about technologies such as electronic commerce, business applications, or scheduling/calendaring software.

Here are a few instances uncovered during the study.

Storage technology - The Senate IS group is currently exploring options for archiving audio-only or audio/video recordings to digital format. If this is implemented, it implies the need for a means of long-term digital storage, and for a fast network connection to that system, because it will also need to be retrieved.

Remote work - A Citrix brand MetaFrame system with four dial-in lines is used to provide remote/telecommuting connectivity for Senators and authorized Senate staff members.

Connectivity/local area networking - the Capitol building has some areas that need improvement in the area of voice/video and data cabling. Following are recommendations for the cabling infrastructure in the Capitol Building. If these were implemented, the result would be *improved efficiency and security in the electronic delivery of services.*

1. After proper testing, remove all data, voice and video cabling no longer in use. This will free up some space in cabling pathways, and eliminate a source of potential interference.

2. Create and enforce standards for new cabling installations throughout the building (all tenants) to include specified installation and testing criteria, and a consistent labeling scheme. This will greatly reduce the time it takes to make changes.

3. Add conduit to the northeast tunnel where cabling is now exposed, then move cabling into that conduit. This offers protection from both unintentional damage and deliberate sabotage.

4. Secure Technology Closets to reduce potential damage to expensive equipment. May not be required if move to a fiber to the workstation system (see item 6.)

   The next two recommendations would be an <u>either-or choice</u> – i.e., select one or the other, not both.

5. Expand the current conventional cabling system

   a. Add single mode fiber cabling to the backbone infrastructure.

b. Add new copper unshielded twisted-pair (UTP) Category 5e cabling to workstations in renovated areas.

6. Install centralized fiber optic horizontal cabling (fiber to the workstation) throughout the building to add flexibility, reduce management costs, and increase bandwidth capability.

Audio and video teleconferencing - these technologies are already used rather extensively at the Capitol building, especially by the Legislative offices.

Much of the burden of supporting these technologies falls on InterTech since that agency supports both voice and data systems for many of the building's tenants. Thus the main prerequisites for the building as a whole would be to ensure a sufficient amount of fiber and copper connectivity from the outside world into the main closet/POP in the basement.

Otherwise, we believe that more and more of the videoconferencing to be done in the future will run over the "data" network, requiring a solid cabling infrastructure, switched 10/100 end-user connections, and a high-capacity backbone such as Gigabit Ethernet.

5. Implementation Plan

Due to the very preliminary nature of this project, it is not yet possible to provide a detailed plan with associated resources and dates.

The first step of this project will be providing the expansion space. New networking will be provided in this space and the systems should be up and running before the move.

Since the remodeling and restoration of the Capitol will require the vacating of one wing at a time, temporary (swing) space will need to be found for the other Capitol tenants. Temporary networking for the swing space should be but in place before the tenant moves, to minimize any disruptions. Between each phase, the network systems will need to be adjusted to meet the needs of the temporary tenants for the next phase.

There are many abandoned cables in the Capitol building. The abandoned cables and wiring should be removed during the phased restoration. All new wiring should be carefully labeled and the locations documented.

Network closets are located throughout the Capitol building. Some of these network closets will be affected with each phase of construction. Care will need to be taken to upgrade (and in some cases move) these closets without disrupting the network service to other areas of the Capitol.

A. Relocation to Expansion Space

The following public and shared spaces will be moved to the expansion space: shared Legislative hearing rooms, press conference room, press corps offices, and lobbyist space. The following office spaces will be moved to the expansion space: Senate Information Systems, Senate Sergeant at Arms, Senate Media Services, Senate Index, Senate Fiscal Services, Senate Publications, Senate Counsel and Research, Senate Fiscal Analysis, Senate Majority Research, Senate Minority Research, House TV, and House Sergeant at Arms. All of the systems for the expansion space should be up and running before the move. This will also involve connecting these networks with those in the Capitol building.

B. Capitol Construction Phase One - East Wing

The work in the east wing will affect the House Chief Clerk's Office Information Systems, some House temporary offices, House meeting rooms, several Senate offices, the Supreme Court and the Minnesota Historical Society offices and some of the Governor's offices (including the IS staff). The House Chief Clerk's Is office and the Governor's IS staff will require the most coordination for moving systems.

C. Capitol Construction Phase Two - West Wing

Work on the west wing would affect several tenants including the Governor's Office, the Attorney General's office, and some Senate offices. The Governor's Office and Attorney General's office should be minimally affected since each has a relatively small network, the switches for which can be moved as personnel are moved. This phase also affects the Senate Chamber.

D. North Wing and Rotunda

These areas have the smallest amount of space to be remodeled and the fewest number of tenants. This phase affects some Senate offices, most of the House offices in the Capitol, and the House chamber. This phase also involves the information desk, which will need to be connected to the MHS.

6. High-Level Technology Model

Due to the multiplicity of tenants and the preliminary nature of the project, this description will be tentative. Some of the smaller tenants of this building have little or no documentation about their network resources, which limits the information we are able to provide.

Each of the tenants has standards for and maintains its own desktop and laptop PCs. We don't

foresee a need to make changes to the current acquisition or support of these systems.

Most of the shared systems/servers that provide services within the Capitol Building are either already outside the building (provided via other office buildings in which the various tenants are located, or provided by InterTech) or will be moved outside the building during the project. This would include the AS/400 in the Senate Fiscal Analysis area, and the seven Intel-compatible servers currently located in six locked cabinets in the Senate IS equipment room.

Nearly all the routers used by building tenants are managed by InterTech, and located in a room that would be affected minimally by the remodeling project. Thus those links should remain intact and stable. The Senate IS group maintains the router for the Legislature, but this, too, would be little affected.

For voice services (phones), we recommend the continued use of InterTech expertise.

Many of the links to the outside world are via fiber among Capitol complex buildings. Others are leased copper circuits, which might need to be re-provisioned during the moving.

We anticipate that the new/renovated space in another building will be linked via fiber optic cabling, with sufficient strand count to provide services for all of the tenants who have offices/spaces in both the Capitol Building and the other/new building. These fiber links could in effect create an extended LAN, providing high bandwidth connectivity when combined with up-to-date electronics.

Concluding Remarks

Most of the technology intensive groups are moving form the Capitol to the expansion space. This will allow the new systems to be up and running before they are moved over.

A new predesign study will be needed for the new expansion space. This predesign study will also require a separate Office of Technology review. At that time, more details will be available.

List of Attachments

Minnesota State Capitol Predesign Study Technology Report, submitted by to LKPB and Miller Dunwiddie by Elert & Associates, Revised 6-12-01

INTRODUCTION

The predesign needs summaries are divided into two main areas:

- **Public Needs**
  This covers the needs for the public and ceremonial spaces as well as other general areas of the Capitol. The public and ceremonial spaces are those spaces defined as such in the *Policy for Works of Art in the Minnesota State Capitol*, Capitol Area Architectural and Planning Board, December 1998. The primary considerations in these spaces are the restoration and maintenance of the historic character and the public use of the space.

- **Tenant Needs**
  The tenant spaces are the offices and other areas that are assigned to a tenant group by Real Estate Management. The primary consideration in these spaces is the needs of the people working there.

In some cases, a space is used by both the tenants and the public. For example, the Governor's anteroom is an office space for a receptionist and it is also a historically significant room and part of the MHS tours of the building. In these cases, the space is discussed in both areas. The function as a workspace is discussed in the tenant needs summary, and the public use and the historic aspects are discussed in the public needs summary.

The following are the summaries of the public needs within the Capitol. The information on the public needs was gathered from discussions with the tenants, the Minnesota Historical Society, the Plant Management Division, and the advisory group. The spaces were also visually inspected, and the previous studies and restoration work at the Capitol were reviewed.

For information on the tenant needs see Appendix C.

INDEX TO APPENDIX B

Key Needs
- **Restoration of remaining public and ceremonial spaces**
- **Review of previously restored spaces**

PUBLIC AND CEREMONIAL SPACES

The public and ceremonial spaces are considered historically significant spaces and are to be restored and maintained as such. The *Policy for Works of Art in the Minnesota State Capitol* defines which spaces are considered public and ceremonial.

Throughout the years, the amount of public interest in government has significantly increased. The spaces have become overcrowded during legislative sessions and periods of controversial issues. Groups will often gather in the public corridors to view committee hearings and legislative floor sessions via closed circuit television.

Public and private groups schedule many exhibits and events throughout the public spaces of the Capitol, especially in the Rotunda and the west ground floor corridor (known as the "great hall"). Demand and usage for public space varies. For example, some days as many as four groups will schedule exhibits or events in a single space, while other days the spaces are nearly vacant. The Capitol receives requests to schedule approximately 150-250 events and groups each year. These spaces are scheduled through Plant Management. Plant Management also takes care of setting up and taking down chairs, tables, stages and podiums as needed for these events.

The public and ceremonial spaces are also an important part of the building tours. For more information about the tours see the Tenant Needs Summaries – Minnesota Historical Society in Appendix C.

Miller Dunwiddie Associates completed a *Comprehensive Preservation Plan and Implementation Strategy* for the Minnesota State Capitol in 1988. The study highlighted all areas of the Capitol Building that required restoration work in accordance to the original architect Cass Gilbert's drawings. Some of that work has been completed, but a significant number of areas still need to be restored.

Basement – Only a portion of the basement was part of the original building. The rest of the basement was excavated in 1936 to provide more storage and mechanical space for the building. The Governor's dining room and the Judicial dining room are not original to the building, but are still considered important historic spaces.

Previously Restored Spaces:
- Rathskeller and Capitol Cafe

Need to be Restored:
- Judicial dining
- Governor's dining
- Stair to Rathskeller

Ground Floor – The ground floor of the Capitol is and has been mostly office spaces. The public corridors are used for public gatherings, events and exhibits. The ground floor east wing is currently subdivided into offices and is not accessible to the public. This space was exhibit space for the MHS until they moved to their first building in 1918. Then, it becamea public corridor and it should be restored and returned to this use.

Previously Restored Spaces:

- West wing corridor - the "great hall"
- West portico and vestibule
- South vestibule and porte-cochere
- Hearing room G-15

Need to be Restored:

- North wing corridor
- Circular House stair
- East wing corridor, vestibule and portico
- Grand Stairs

First Floor – The first floor is the main entrance floor of the Capitol. The information desk, Governor's office, Attorney General's office, most of the public hearing rooms and the base of the Rotunda are located on the first floor. The Minnesota Historical Society tours begin and end at the information desk. The Rotunda and some of the public corridors are used for public displays, events and press conferences.

Previously Restored Spaces:

- Hearing rooms 107,112 and 118 (historically offices, adapted for hearing rooms)

Need to be Restored:

- Public corridors
- Rotunda
- Hearing rooms 123 and 125 (to be returned to offices)
- Governor's reception room
- Governor's anteroom
- Governor's office ("private office" on original. building plans)
- Governor's conference room ("public office" on original building plans)
- Attorney General's anteroom
- Grand Stairs

Second Floor – The House, Senate, and Supreme Court chambers are located on the second floor. The public and Lobbyists tend to congregate at the gates of the chambers and in the public corridors to observe legislative sessions. There is a food bar located in the south dome corridor during session. Some smaller hearing and meeting rooms are also located on this floor.

Previously Restored Spaces:

- House chamber, lobby and retiring room
- Senate chamber, lobby and retiring room
- West minor corridors
- Supreme Court chamber – limited work

Need to be Restored:

- Public corridors
- Rotunda
- Supreme Court chamber
- Supreme Court consultation room
- East minor corridors
- North minor corridors (ceilings)
- Grand Stairs

Third Floor – The public galleries to the House and Senate chambers are located on the third floor. Some additional hearing rooms are also located on this floor.

Previously Restored Spaces:

- House gallery
- Senate gallery
- West minor corridors

Need to be Restored:

- Rotunda corridors
- Rotunda
- East minor corridors
- Minor "bee-hive" domes

OTHER CRITERIA

Signage – There is a need for updated signage that complies with ADA standards. Clearer and more signage is also needed to direct visitors and identify rooms. Refer to Public Needs Summaries – Signage in Appendix B.

Waste and Recycling Containers – The waste and recycling containers, which are located in public and ceremonial spaces, should be, in materials and design, consistent with the historic character of the building.

Interior Stone Cleaning – This should be part of the restoration of all of the public and ceremonial spaces. An ongoing schedule for stone cleaning should be established and implemented. This schedule should be included in an interior maintenance manual for the building.

Space or Function	Description of Function	Location (rm #)	Finishes Repair/ Cleaning			Historic		Special Comments
			Floor	Walls	Ceiling	Yes	No	
Restaurant/ Cafeteria	Public Dining	B24				x		Recently renovated and restored
Governor's Dining		B22	VCT floor needs replacement	Wood paneling and ACT needs replacement	ACP ceiling needs replacement	x		Complete restoration required
Judge's Dining		B27	Carpet needs replacement	Plaster water damaged/ murals need restoration	Plaster water damaged/ touch up paint	x		Currently storage for Plant Management - Needs complete restoration
Stairs	Public Circulation	B24H	Restore marble steps & base	Touch up paint near floor & at corners - Restore to original	Restore to original	x		Recently renovated - Restore railing to original color and refinish wood
Corridor	Public Circulation	B26B		Touch up paint			x	Hot/cold drink, snack and newspaper vending
Corridor	Public Circulation	BC03	Refinish floor	Expose stone? Refinish walls	Refinish ceiling		x	Potential future reuse as gathering/ public space - Restoration required

Space or Function	Description of Function	Location (rm #)	Finishes Repair/ Cleaning			Historic		Special Comments
			Floor	Walls	Ceiling	Yes	No	
Stairs	Public Circulation to Cafeteria	BS01	Patch damaged	Touch up paint &		x		Recently renovated - Restore railing to original color and refinish wood
North Corridor	Public Circulation - Utilized by groups for public functions/ displays	7	Remove abandoned junction boxes and restore floor	Restore to original	Restore original decoration	x		Serves as overflow space for public to view hearings on televisions in corridor - Restore lighting to original
North, East, South & West Dome Corridors	Public Circulation	GC05, GC06, GC07, GC08	Restore stone floor at junction box locations	Touch up murals	Touch up murals	x		Restore lighting to original
East Stair Corridor, North and South	Public Circulation	GC02, GC03		Touch up paint/ repair plaster		x		Poor/ inadequate lighting - Restore original stencils in alcoves
West Stair Corridor, North and South	Public Circulation	GC10, GC11		Repair plaster and restore to original color	Repair plaster and restore to original color	x		Poor/ inadequate lighting - Restore original stencils in alcoves
West Corridor	Public Circulation - Utilized by groups for public functions/ displays - "Great Hall"	GC09		Repair plaster and restore to original color	Repair plaster and restore to original color	x		Currently storing office furniture/ inadequate lighting
Vestibules	Public Circulation	GV02, GV05, GV06, GS02		Restore to original colors & decoration	Restore to original colors	x		Exposed mechanical pipes in SW vestibule
Senate Hearing Room	Meetings/ Conferences	G15				x		Refer to Hearing Room spreadsheet for more information
Stairs	Public Circulation	GS02		Restore to original color	Paint peeling under steps - water damage	x		Restore stair to original colors

Space or Function	Description of Function	Location (rm #)	Finishes Repair/ Cleaning			Historic		Special Comments
			Floor	Walls	Ceiling	Yes	No	
North Corridor	Public Circulation/ Public Displays/ Overflow for	FC04	Restore stone floor at	Restore murals to	Restore murals to	x		Electrical and data ports in alcoves on south side/ Vacant display niches/ Restore alcoves to original decoration
North, East, South & West Dome Corridor	Public Circulation	FC05, FC06, FC07, FC08	Remove abandoned junction boxes and restore stone floor	Touch up murals		x		Information desk requires updating - See Minnesota Historical Society spreadsheet/ Restore lighting to original
East Stair Corridor, North & South	Public Circulation	FC02, FC03		Touch up murals		x		
East Corridor	Public Circulation/ Access to Senate	FC01		Restore lunettes to original		x		Restore to original lighting
Rotunda	Public Ceremonies/ Events	F150		Restore to original color and	Restore side aisle paint color/ touch	x		Electrical conduit and junction boxes exposed above display cabinets/ exposed wiring/ Restore candelabra to original
West Stair Corridor, North & South	Public Circulation	FC11				x		Restore to original lighting
West Corridor	Public Circulation/ Used for Media Conferences	FC09		Touch up murals/ Remove graffiti damage/ Restore lunettes to original		x		Remove display cabinets near Governor's Reception and restore to match Attorney General's Reception
Attorney General's Anteroom	Reception for Attorney General	F102		Restore to original color	Restore to original color	x		Part of the public historical tour - Refer to Attorney General's spreadsheet/ Restore to original lighting
Governor's Anteroom	Reception for Governor/ Public Tours	F130		Restore to original color	Restore to original color	x		Part of the public historical tour - Refer to Governor's Office spreadsheet/ Restore to original lighting

Space or Function	Description of Function	Location (rm #)	Finishes Repair/ Cleaning			Historic		Special Comments
			Floor	Walls	Ceiling	Yes	No	
Governor's Reception Room	Media Conferences/ Public Tours/ Governor Events	F130C	Carpet patching/ touch up floor	Woodwork repair/ touch up paint	Clean chandeliers	x		Part of the public historical tour
Governor's Historic Conference & Private Office	Private Office/ Conference Room	131, 131B				x		
Stairs	Public Circulation	FS04		Restore to original color	Paint peeling under steps - water damage	x		Restore to original lighting
Vestibules	Public Circulation	FV00, FV01, FV02		Touch up murals & repair plaster	Touch up murals & repair plaster	x		Restore ceilings and lunettes in North Vestibule
Hearing Room	Meetings/ Conferences/ Public Addresses	107					x	Columns obstruct view - Refer to Hearing Rooms spreadsheet
Hearing Room	Meetings/ Conferences/ Public Addresses	112			Plaster repair required		x	Columns obstruct view - Refer to Hearing Rooms spreadsheet
Hearing Room/ House Meeting Room	Meetings/ Conferences/ Public Addresses	118		Restore decoration & molding to original			x	Recently refinished/ Large columns obstruct view
Hearing Room	Meetings/ Conferences/ Public Addresses - Finance Committees	123					x	To be converted back to offices
Hearing Room/ House Conference Room	Meetings/ Conferences/ Public Addresses - Finance Committees	125					x	To be converted back to offices

Space or Function	Description of Function	Location (rm #)	Finishes Repair/ Cleaning			Historic		Special Comments
			Floor	Walls	Ceiling	Yes	No	
House Retiring	Formal conference/ Meeting room	S271	Carpet patching			x		Lights cut into coffers - Poor/inadequate lighting - Refer to House Spreadsheet/ Seats 16-20 people
House Chamber	Session forum, ceremonial occasions (1x/month - open houses)	S270	Carpet frayed at aisles			x		Recently restored
House Lobby	Public view of chamber/ Public tours	SV03	Carpet crushed and worn at gate path	Touch up paint		x		Restore lighting and electrical
East and West House Corridors	Private corridors used by house staff, legislators & public/ Access to house chamber	SC06, SC07	Needs replacement	Remove vinyl wall covering/ Restore to original colors	Murals need restoration	x		Restore to original lighting
North, East, South and West Dome Corridors	Public Circulation	SC08, SC09, SC10, SC11		Restore wall panels to original color and decoration	South corridor ceiling damaged/ Restore to original color	x		Services for the Blind self-service food counters located in South Corridor/ Balcony may require structural investigation/ Update electrical to support servery
East Stair Corridor, North and South	Public Circulation/ overflow for viewing sessions & committee hearings	SC03, SC05		Restore wall panels to original color and decoration		x		Restore to original lighting
Supreme Court Lobby	Public view of chamber/ Public tours			Restore to original color & decoration	Touch up paint	x		Restore to original lighting
Supreme Court Chamber	Used while Supreme Court is in session	S220A				x		Recently restored/ gallery seats 50 people

Space or Function	Description of Function	Location (rm #)	Finishes Repair/ Cleaning			Historic		Special Comments
			Floor	Walls	Ceiling	Yes	No	
Supreme Court Consultation Room	Meeting room - shared with public and legislative members	220			Restore to original color & decoration	x		Private meeting room - seldom used
Supreme Court Robing Rooms	Judge's preparation spaces	219, 221				x		Used by judges to prepare for court / private toilet facilities
East Minor Corridors, North and South	Private corridors	SC01, SC02	Needs replacement	Painted white VWC - needs replacement	Old ACP ceiling needs repair	x		North Corridor carpet is crushed & stained./ South Corridor ceiling in poor condition/ Restore to original lighting
Rotunda balcony	Public circulation/ View of ceremonies/ gatherings	S250				x		Restore to original candelabra and lighting
West Stair Corridor, North and South	Public Circulation/ overflow for viewing sessions & committee hearings	SC14, SC16		Restore wall panels to original color and decoration		x		Display cases may need to be replaced/ Speaker placed above door into corridor
Senate Lobby	Public view of chamber/ Public tours	SV02	Carpet crushed and worn at gate path	Restore to original color & decoration		x		Desks for Senate Sergeants
Senate Chamber	Used while Senate is in session	S280				x		Recently restored
Senate Retiring Room	Meetings/ Conferences/ Break Room	S281	Minor carpet patching	Touch up paint/ Restore to original color & decoration	Restore to original color & decoration	x		Drafty french doors/ Restore to original lighting
West Minor Corridor, North and South	Private corridors used by members & staff - side access to chamber	SC12, SC13	Clean carpet			x		Ceiling dropped to provide mechanical plenum/ Restore to original lighting

Space or Function	Description of Function	Location (rm #)	Finishes Repair/ Cleaning			Historic		Special Comments
			Floor	Walls	Ceiling	Yes	No	
Stairs	Public circulation	SS02		Restore to original color	Paint peeling under steps - water damage	x		Restore to original lighting
Conference Room	Meetings/ Conferences/ House Majority meeting room	217						Private offices turned into meeting room
House Speaker's Office		218						
Former Chief Justice's Office		223						Currently not used
Conference Room	Meetings/ Conferences	224						
Conference Room	Meetings/ Conferences	229						
Conference Room	Meetings/ Conferences	237						Eight-person table with gallery seating - fit up to 20 people - expensive finishes
Office Space/ Reception	Offices	211			Restore murals/ repair plaster			Originally used for circulation corridors

Space or Function	Description of Function	Location (rm #)	Finishes Repair/ Cleaning			Historic		Special Comments
			Floor	Walls	Ceiling	Yes	No	
House Vestibules		310, 313		Touch up paint		x		Old desks currently stored in west vestibule
House Gallery	Public viewing area	350	Repair carpet at steps	Touch up paint		x		Upholstery recently replaced/ Restore to original lighting
East Wing North & South Minor Corridors	Public Circulation	321, TC01			Touch up murals	x		Water problems in ceiling/ Restore to original lighting
North, East, South and West Dome Corridors	Public Circulation	TC03, TC04, TC05, TC06		Restore to original color	Touch up paint and restore finish	x		Restore cast iron railing & column capitals to original color/ Water problems in ceiling/ Restore to original lighting
West Wing North and South Minor Corridors	Public Circulation	TC07, TC08			Restore ceiling	x		Water problems in ceiling/ Ceiling dropped for mechanical plenum space
Senate Gallery	Public viewing area	337, 338		Restore to original color	Restore to original color & decoration	x		Upholstery recently replaced/ Restore to original lighting
Stair to Quadriga	Semi-private stair	TS08				x		Locked - inaccessible to public unless on public tour
Stairs	Public Circulation	TS01		Restore to original color	Paint peeling under steps - water damage	x		Restore to original lighting
Conference Room	Session hearings, Government Relations Council (Lobbyist) workspace	315					x	Recently renovated space - new patterned carpet, painted ceiling, vinyl wall covering/ Seats 18-20 people
Hearing Room	Meeting Room/ Minority House	316					x	Recently renovated space - new patterned carpet, painted ceiling, vinyl wall covering

Space or Function	Description of Function	Location (rm #)	Finishes Repair/ Cleaning			Historic		Special Comments
			Floor	Walls	Ceiling	Yes	No	
Hearing Room	Small meeting room	318					x	Meetings prone to interruption by traffic along north side - currently separated by fabric-covered partitions - poor meeting space

Key Needs:
- **More hearing and meeting rooms.**
- **Larger hearing rooms to accommodate the public audiences.**
- **Better presentation and other technology.**

HEARING AND MEETING SPACES

The hearing, meeting and conference spaces in the Capitol can be divided into three categories:
- Chambers
- Public hearing rooms
- Private tenant meeting rooms

Chambers

The chambers are the original large meeting spaces in the building. Originally the Senate and House members worked in the chambers and the public participated from the galleries. This has changed over the years as the workload of the Legislature and the public participation in the legislative process have increased. The chambers are now used for the more formal business of the legislature. Most of the public interaction now happens at the legislative committees, in the hearing rooms. The north gallery space for the House has been turned into office space.

For more information on the use of these spaces, see the Tenant Needs Summaries in Appendix C. For more information on the historic character of these spaces, see the Public Needs Summaries – Public and Ceremonial Spaces in Appendix B. For information on the technology needs of these spaces, see the Elert & Associates report in Appendix A.

Public Hearing Rooms

During the legislative session, committees schedule the public hearing rooms throughout the day and evening hours (in two-hour blocks) in both the Capitol and the State Office Building. The standing committees have scheduled meeting rooms and times. There are also other committees (including conference committees) that need to use the public hearing rooms. It is hard to schedule these meetings, because there are not enough rooms available. At times, public hearings have been held in staff conference rooms, because this is the only place available. These rooms do not have enough space for the committee members and staff, much less the public.

The size of the hearing rooms is not adequate to accommodate the public audiences. The largest hearing room in the Capitol (G-15) can seat 141 audience members. Most of the audience seats have partially obstructed views of the committee and testimony tables. This is due to the short structural spans in the building and the multitude of columns. There is no economical way to provide large, column-free spaces for hearing rooms in the Capitol. Because of the limited seating in the hearing rooms, closed circuit TV's (or power and cable jacks for them) have been added in some of the hallways, to broadcast the hearing and chamber proceedings. These TV's are located around the second floor and in the first floor north corridor between hearing rooms 107 and 112.

The hearing rooms in the State Office Building were upgraded this past summer (2000) for additional technology. The hearing rooms in the Capitol do not have the same technology. Most of the hearing rooms in the Capitol have large windows. The light from the windows makes it difficult to video broadcast or record the hearing proceedings and to view multimedia presentations. It would be difficult to add and upgrade the technology to the Capitol hearing rooms. For more information about the technology requirements of the hearing rooms see the Elert & Associates report in Appendix A.

Private Tenant Meeting Rooms
Most of the tenants are working in teams. In order to facilitate this work, there is a need for more small (6 to 10 people) and midsize (12-20 people) meeting and conference rooms within their office spaces. For more information on the meeting rooms needs of each tenant see the Tenant Needs Summaries in Appendix C.

HISTORICAL SPACES

- Senate Chamber
- Senate Retiring Room
- House Chamber
- House Retiring Room
- Supreme Court Chamber
- Supreme Court Consultation Room

OTHER CRITERIA

New hearing rooms should:

- Maintain clear sight lines for both legislative members and the general public.
- Be adaptable to changing technology.
- Be flexible in use.

Estimated sizes and number of hearing rooms needed:

- 6 rooms that seat 35 at committee table and 175 in audience
- 2 or 3 rooms that seat 40 at committee table and 300 in audience (with dais form and room for table of 12 in front of dais)
- 1 or 2 rooms that seat 40 at committee table and 500 to 600 in audience (possibly by combining 2 rooms of 300)

Room #	*Location* / Description *(user)*	Square Feet	Total Seating Capacity	Table Seats	Audience/ Gallery Seats	Hearing Room	Private Meeting Room	Power (special locations) / Video (built in) / Data / Microphones — Available Technology		General Notes
	Ground Floor									
G15	**Senate Hearing Room** *(Senate Tax/ Bill Committees)*	1,563	165	24	141			Power (special locations) Video (built in) Data Microphones	walls, columns, floor at testimony table 4 cameras floor at testimony table built in at hearing and testimony table	acoustically treated walls; circular floor plan makes presentation difficult; column obstructions. All wire conduits to tables are full.
G21	**Conference Room** *(Senate Counsel & Research)*	453	25	12	13			Power (special locations) Video (built in) Data Microphones	accessed from wall none none portable	located in several cross traffic paths.
G23K	**Conference Room** *(Senate Fiscal Analysis, Senate Counsel & Research)*	240	24	15	0			Power (special locations) Video (built in) Data Microphones	walls none walls portable	
	First Floor									
107	**Senate Hearing Room** *(Senate)*	1,651	100	21	72			Power (special locations) Video (built in) Data Microphones	accessed from table surfaces 3 cameras at microphone locations accessed from table surfaces	poor acoustics due to noise from exterior hallway; column obstructions. Data lines are split at tables and are noisy.
112	**Senate Hearing Room** *(Senate)*	1,651	100	21	75			Power (special locations) Video (built in) Data Microphones	accessed from table surfaces 3 cameras at microphone locations accessed from table surfaces	poor acoustics due to noise from exterior hallway; column obstructions. Data lines are split at tables and are noisy.
118	**House Meeting Room** *(House/ Senate)*	1,413	73	14	59			Power (special locations) Video (built in) Data Microphones	walls none walls accessed from table surfaces	column obstructions, sometimes used as a hearing room.
123	**Senate Hearing Room** *(Senate)*	1,857	140	24	116			Power (special locations) Video (built in) Data Microphones	walls, columns none walls, floor at testimony table accessed from table surfaces	column obstructions, large windows make presentation difficult.

Room #	*Location* / Description *(user)*	Square Feet	Total Seating Capacity	Table Seats	Audience/ Gallery Seats	Hearing Room	Private Meeting Room	Power (special locations) / Video (built in) / Data / Microphones — Available Technology		General Notes
125	**Senate Hearing Room** *(Senate Finance Committee)*	931	60	16	41			◎	walls, columns	column obstructions, large windows make presentation difficult.
								⬠	none	
								△	walls, floor at testimony table	
								□	accessed from table surfaces	
	Second Floor									
217	**Conference Room** *(House Majority Caucus)*	1,342	127	27	100			◎	walls	
								⬠	none	
								△	walls	
								□	none	
220	**Conference Room**	1,500	18	8	10			◎	walls	historically accurate (former Consultation Room for Supreme Court)
								⬠	none	
								△	none	
								□	none	
224	**Conference Room** *(Senate)*	420	20	8	15			◎	walls	
								⬠	none	
								△	walls	
								□	portable	
229	**Conference Room** *(Senate)*	420	20	14	5			◎	walls	
								⬠	none	
								△	walls	
								□	portable	
237	**Conference Room** (Senate)	365	20	8	16			◎		Scheduled through Senate Rules
								⬠	none	
								△		
								□		
	Third Floor									
316	**House Conference Room** (House Minority Caucus)	2,154	127	27	100			◎	walls, floors	column obstructions
								⬠	none	
								△	walls	
								□	(17) locations	

Room #	*Location* / Description *(user)*	Square Feet	Total Seating Capacity	Table Seats	Audience/ Gallery Seats	Hearing Room	Private Meeting Room	Power (special locations) / Video (built in) / Data / Microphones — Available Technology	General Notes
318	**Senate Hearing Room**	1,173	70	21	45			walls none wall (1) accessed from table surfaces	no separation from access corridor to adjacent tenant office space.
	Fourth Floor								
404	**House Lounge** (House Training)	600	12	12	0			walls none none none	not handicap accessible; used for staff for training, and House Members meetings away from the House floor.
408	**House Lounge** (Informal House Retiring Room)	600	12	12	0			walls none none none	not handicap accessible; used for staff for training, and House Members meetings away from the House floor.
	Total	*18,333*							

Key Needs:
- **Upgrades to meet ADA guidelines and building code.**
- **Signage**

TUNNEL SYSTEM

Most of the buildings in the Capitol Complex are connected by underground tunnels. For the purposes of this predesign, we are only considering the tunnels that directly connect to the Capitol building.

The information in this summary was gathered by visually inspecting the tunnels and by reviewing information from the DSBC. Many of these areas may require further review. Tunnels reviewed in this study are those between the Capitol and:

- The State Office Building (with connection to Ford Building)
- The Administration Building Parking Ramp and parking lot "B"
- The Judicial Center

GENERAL NOTES:

- **Ceiling Height** – Ceiling heights in all tunnels are inconsistent and vary between 6'-10" to 13'-0."
- **Slope** - The floor slope in the tunnels is an immediate concern. Due to the varied grade conditions of buildings within the Capitol Complex, some of the tunnels connecting the buildings have steep slopes (as steep as 1:6) that exceeds the Minnesota accessibility codes requirements for ramps. These tunnels need to be reviewed and may require the addition of landings and handrails. Any new tunnels must meet the current ADA and building code requirements for accessible paths (i.e. slope of 1:12 maximum).
- **Finishes** - Floor, wall, and ceiling finishes are inconsistent in color and material throughout the tunnel system.
- **Lighting** – Fixtures and light quality are inconsistent throughout tunnels.
- **Electrical** - Some of the tunnels have exposed wiring and conduit, which is a critical security issue.
- **Mechanical and Ventilation** – The heating, cooling and ventilation systems require updating and balancing. Mechanical and electrical systems run through some tunnel systems, reducing the head-height or the overall width of the tunnel. Many of these support systems are outdated and need to be modified. Lack of ventilation and differential pressure between tunnel segments cause doors to slam and create hot and cold areas within the tunnel system.
- **Safety Systems** – Not all of the tunnels have emergency call boxes and automatic sprinkler systems. These systems should be extended to all of the tunnels.
- **Signage** - Exiting signage as well as directional signage is also generally lacking and needs to be updated. See Public Needs Summaries - Signage in Appendix B.

TUNNEL TO THE STATE OFFICE BUILDING

This passage is one of the most heavily used tunnels in the system. This tunnel has a parallel utilities tunnel to the side of it.

1a From State Office Building to the Ford Tunnel link

- Length: approx. 528'-9"
- Ceiling height: 7'-8" to 7'-5"
- Slope: approx. 1:24
- Finishes: concrete floors, glazed masonry block walls, and concrete ceilings
- Lighting: wall mounted fluorescent fixtures located down one side of tunnel, exiting signage is in place
- Electrical: in parallel utility tunnel
- Heating and ventilation:
- Safety systems: smoke detectors, emergency call boxes, and automatic sprinkler systems are in place

1b From Ford Tunnel link to the Capitol

- Length: approx. 240'-0"
- Ceiling height: 7'-0" to 7'-8"
- Slope: approx. 1:9 for the first 150'-0" from the Capitol, minimal slope beyond, hand rail on one side
- Finishes: concrete floors, glazed masonry block walls, and concrete ceilings
- Lighting: wall mounted fluorescent fixtures located down one side of tunnel, exiting signage is in place
- Electrical: in parallel utility tunnel
- Heating and ventilation:
- Safety systems: smoke detectors, emergency call boxes, and automatic sprinkler systems are in place
- Other: poor directional signage

TUNNEL TO THE ADMINISTRATION PARKING RAMP

The passage connects the Administration Building Parking Ramp with the State Capitol, but also provides access to the Administration Building and Lot "B", allowing pedestrians to cross under University Avenue easily.

2a From Administration Building Parking Ramp to Lot B

- Length: 124 ft.
- Ceiling height: 7'-6"
- Slope: approximately 1:22 no handrails
- Finishes: concrete floors, walls, and ceilings (some tile), floor edge painted out approx. 9" from tunnel wall

- Lighting: ceiling mounted fluorescent fixtures located centrally down tunnel
- Electrical: exposed wiring and conduit
- Heating/ventilation: absent in this segment of the tunnel system, moisture identified on floor, sprinklers are absent
- Safety systems: smoke detectors and emergency call boxes are in place, while the automatic sprinkler system is absent.
- Other: poor signage

2b From Lot B to the Capitol

- Length:
- Ceiling height: 7'-6"
- Slope: approximately 1:110 (minimal, not identified as a ramp)
- Finishes: concrete floors, walls, and ceilings

TUNNEL FROM CAPITOL TO THE JUDICIAL CENTER

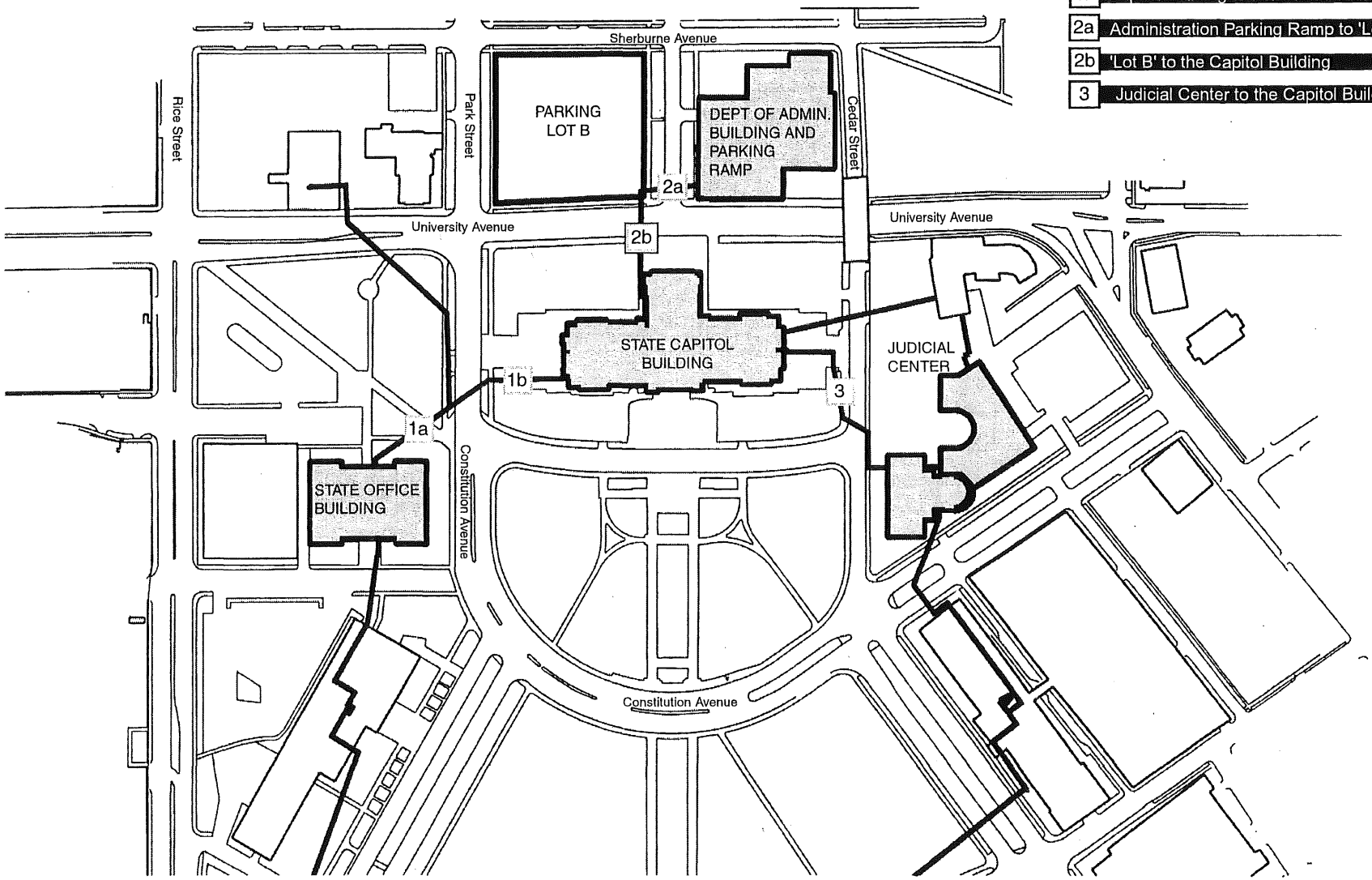
This passage is the shortest tunnel and oldest connection from the Capitol Building.

3 From the Judicial Center to the Capitol

- Length: 360'-7"
- Ceiling height: varies from 7'-1" to 8'-0"
- Slope: approximately 1:16 no rails or landings, slip resistant strips have been applied to the floor
- Finishes: concrete floors, concrete and tile walls, concrete and plaster ceilings
- Lighting: wall mounted fluorescent fixtures located down one side of tunnel
- Electrical: exposed wiring and conduit
- Heating and ventilation: absent in this segment of the tunnel system, moisture identified on floor
- Safety systems: smoke detectors, emergency call boxes, and automatic sprinkler systems are in place

KEY PLAN

- 1a Ford Tunnel link to State Office Building
- 1b Capitol Building to Ford Tunnel link
- 2a Administration Parking Ramp to 'Lot B'
- 2b 'Lot B' to the Capitol Building
- 3 Judicial Center to the Capitol Building



MILLER DUNWIDDIE
ARCHITECTURE / PRESERVATION

123 North Third St., Suite 104
Minneapolis, MN 55401-1657

tel 612.337.0000 fax 612.337.0031

Project:

MINNESOTA STATE CAPITOL PREDESIGN STUDY

Capitol Complex Site Plan, Tunnel System

Project Location: St. Paul, Minnesota

COMMISION NO.: MIN0002

DATE: JUNE 2001

Not to Scale

DRAWING NO.:

B-24

Key Needs

- **Provide more visitor parking**
- **Provide staff parking which is more secure**
- **Provide better informational/directional signage**

VISITOR PARKING

Currently visitors can either park at meter spaces in lots 'Q', 'L', 'F', 'H' or 'D'; or they can park in the metered spaces along the roads. The metered lots are not well marked and, therefore, difficult to find. All visitor parking is metered. Metered spaces work well for visitors who are at the building for short periods, for example those visiting for the historic tours. Visitors who come to public hearings and to observe the legislative floor sessions, need to stay for longer periods of time. Unfortunately, meters have a four hour (or less) maximum. In general, there is an insufficient number of visitor parking spaces in the Capitol area.

BUS PARKING

The tour buses drop off groups on Aurora Avenue, along the south steps. Tour bus parking is located on Constitution Avenue. Because there is also some Capitol Building staff parking along Aurora Avenue, buses are not allowed to pass by another parked bus on this road. This creates a lot of congestion at Aurora Avenue. There are buses, which bring groups to downtown St. Paul and the Minnesota History Center, that also park along Constitution Avenue. At peak times this is a problem because there is not enough bus parking for those visiting the Capitol.

STAFF PARKING

Current staff parking is spread out around the Capitol Building. Many of the staff have to park long distances from the building. Staff must often walk long distances to their cars after late night legislative sessions. Most of the tenant groups identified this as a safety concern.

The following is the information that we received from the Plant Management Division regarding the parking spaces currently assigned to the capitol tenants.

Tenant Group / Parking Facility	Admin. ramp	Aurora Ave.	Judicial Garage	Lot B	Lot C	Lot N	Lot O	Lot Q	Lot X	Lot S	SOB ramp	COB ramp	Total per Tenant
Senate (all staff & members)	16	86	58	118	93	5	26	40			47		489
House (staff in Capitol)											37		37
Capitol Security	4					3		2				3	12
Governor's office	35		1			8							44
Others*	17			4		6	5	33	1	1			67
Totals per parking facility	72	86	59	122	93	22	31	75	1	1	84	3	649

NOTES:

* Others include the Attorney General, Historical Society, administration and various non-state entities, such as the media.

1. The counts for the House is based on last year's data, and all others are based on the current year.
2. There is a considerable difference between session and non-session needs. These counts are for session.
3. The change in majority status affects these counts as well.

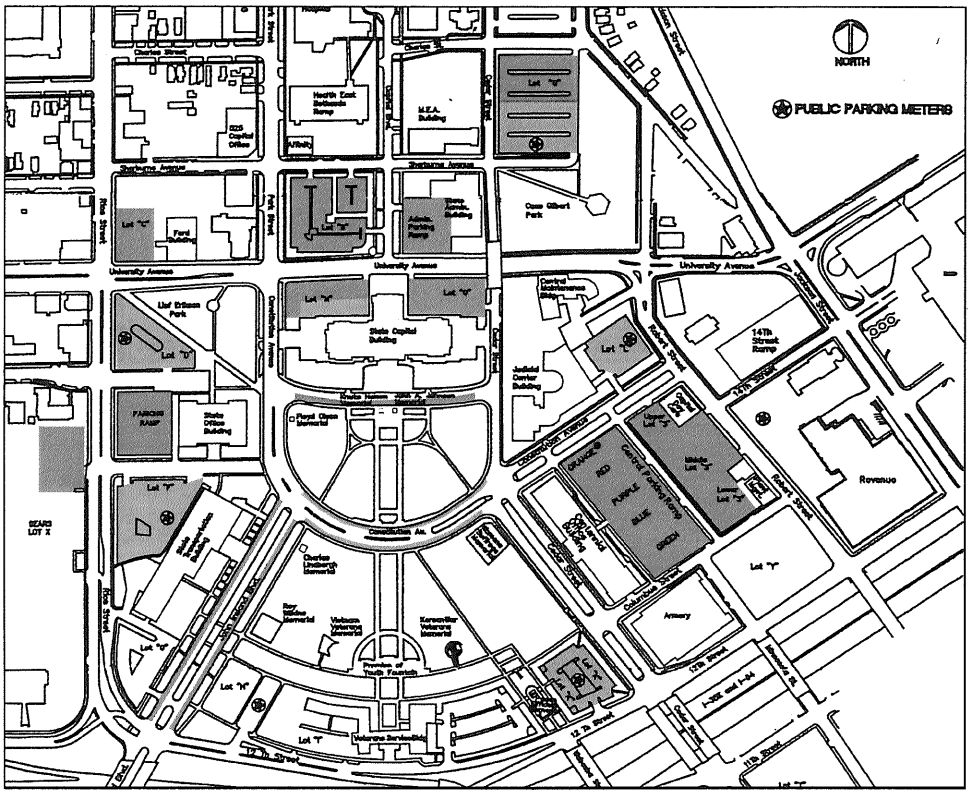
OTHER CONSIDERATIONS

Lots "N" and "O" – Parking lots "N" and "O", on the north side of the Capitol, are temporary parking lots. In *the Comprehensive Plan for the Capitol Area*, these areas are to be landscaped patios or lawns. There is also a security concern about having parking, especially truck and delivery parking immediately adjacent to the Capitol.

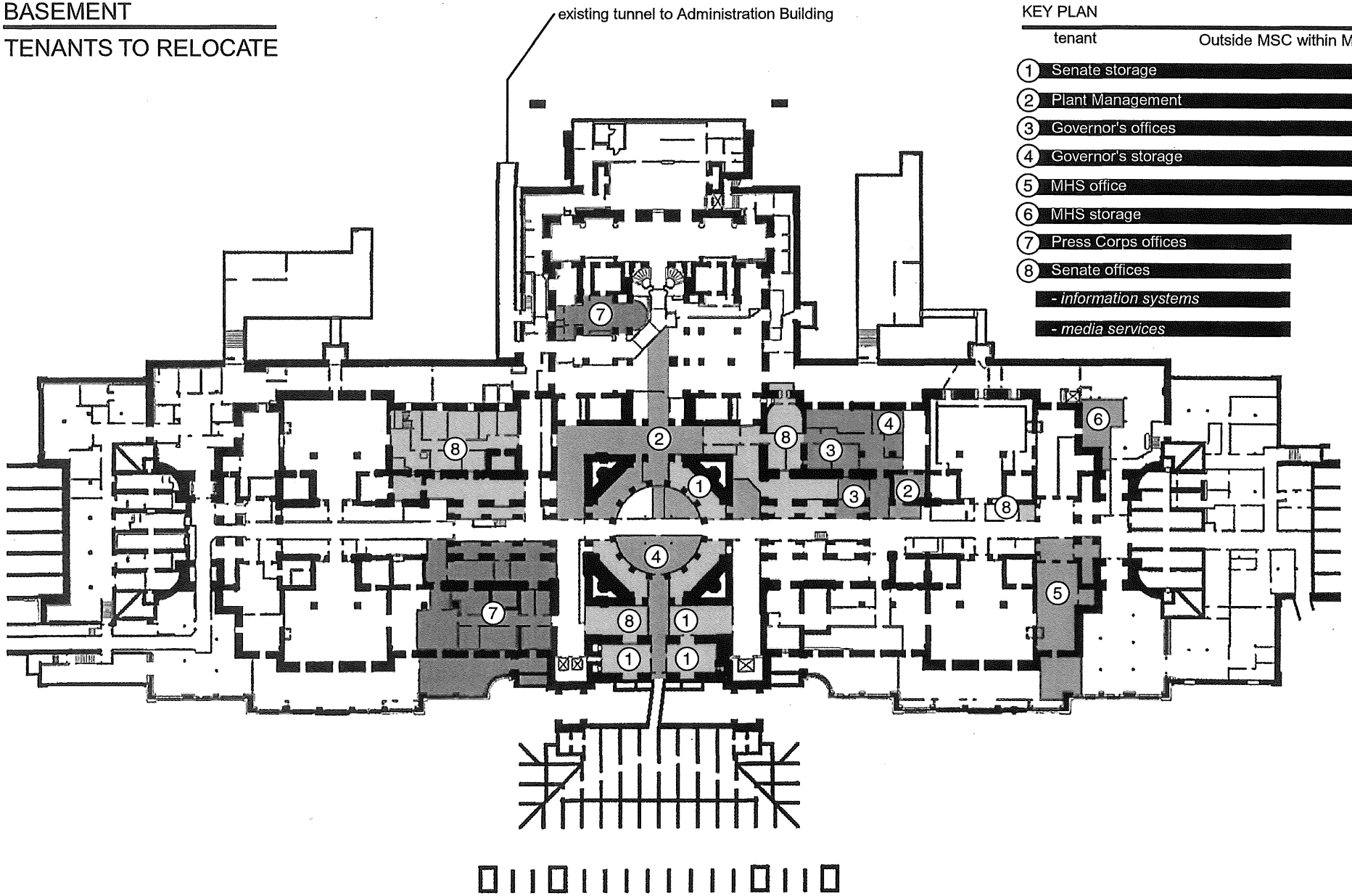
Administration Ramp – The Administration Building Ramp is close to the end of its useful life and will need to be replaced within the next five years.

Signage - Signage for exterior roadways and parking needs improvement. See Public Needs Summaries - Signage in Appendix B.

MAP OF PARKING



BASEMENT
TENANTS TO RELOCATE



MILLER DUNWIDDIE
ARCHITECTURE / PRESERVATION
123 North Third St., Suite 104
Minneapolis, MN 55401-1657
tel 612.337.0000 fax 612.337.0031

Project:
MINNESOTA STATE CAPITOL PREDESIGN STUDY
Basement Floor Plan, relocation of existing tenants

Project Location: St. Paul, Minnesota

COMMISION NO.: MIN0002
DATE: JUNE 2001
Not to Scale

DRAWING NO.:
B - a

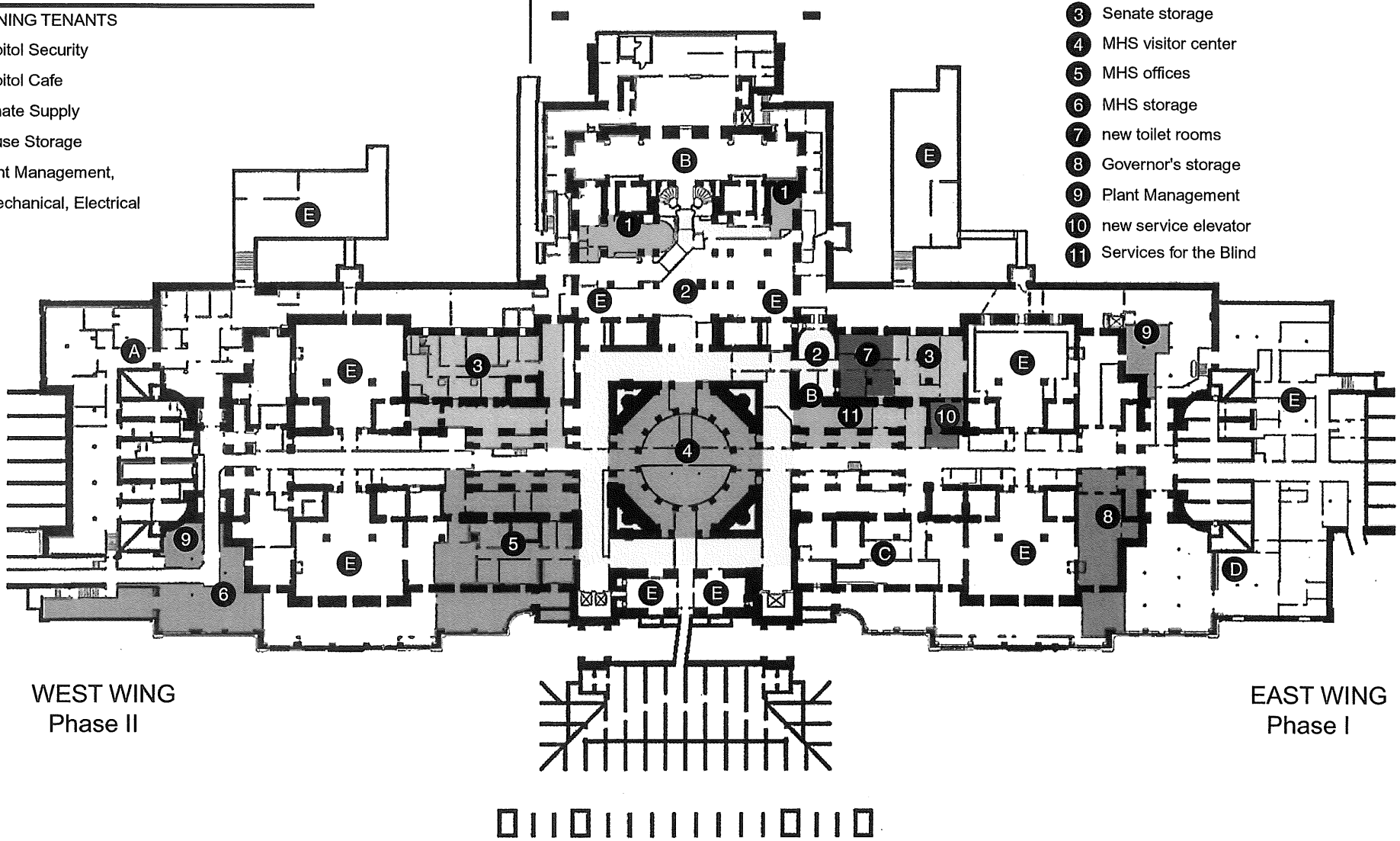
BASEMENT
PROPOSED TENANT LOCATION

KEY PLAN

REMAINING TENANTS

- A Capitol Security
- B Capitol Cafe
- C Senate Supply
- D House Storage
- E Plant Management, Mechanical, Electrical

NORTH WING /CENTER
Phase III



WEST WING
Phase II

EAST WING
Phase I

KEY PLAN

RELOCATED TENANTS

1. restored meeting room
2. public circulation
3. Senate storage
4. MHS visitor center
5. MHS offices
6. MHS storage
7. new toilet rooms
8. Governor's storage
9. Plant Management
10. new service elevator
11. Services for the Blind

MILLER DUNWIDDIE
ARCHITECTURE / PRESERVATION
123 North Third St., Suite 104
Minneapolis, MN 55401-1657
tel 612.337.0000 fax 612.337.0031

Project:
MINNESOTA STATE CAPITOL PREDESIGN STUDY
Basement Floor, proposed location of tenants

Project Location: St. Paul, Minnesota

COMMISION NO.: MIN0002
DATE: JUNE 2001
Not to Scale
Revised Sept. 2001

DRAWING NO.:

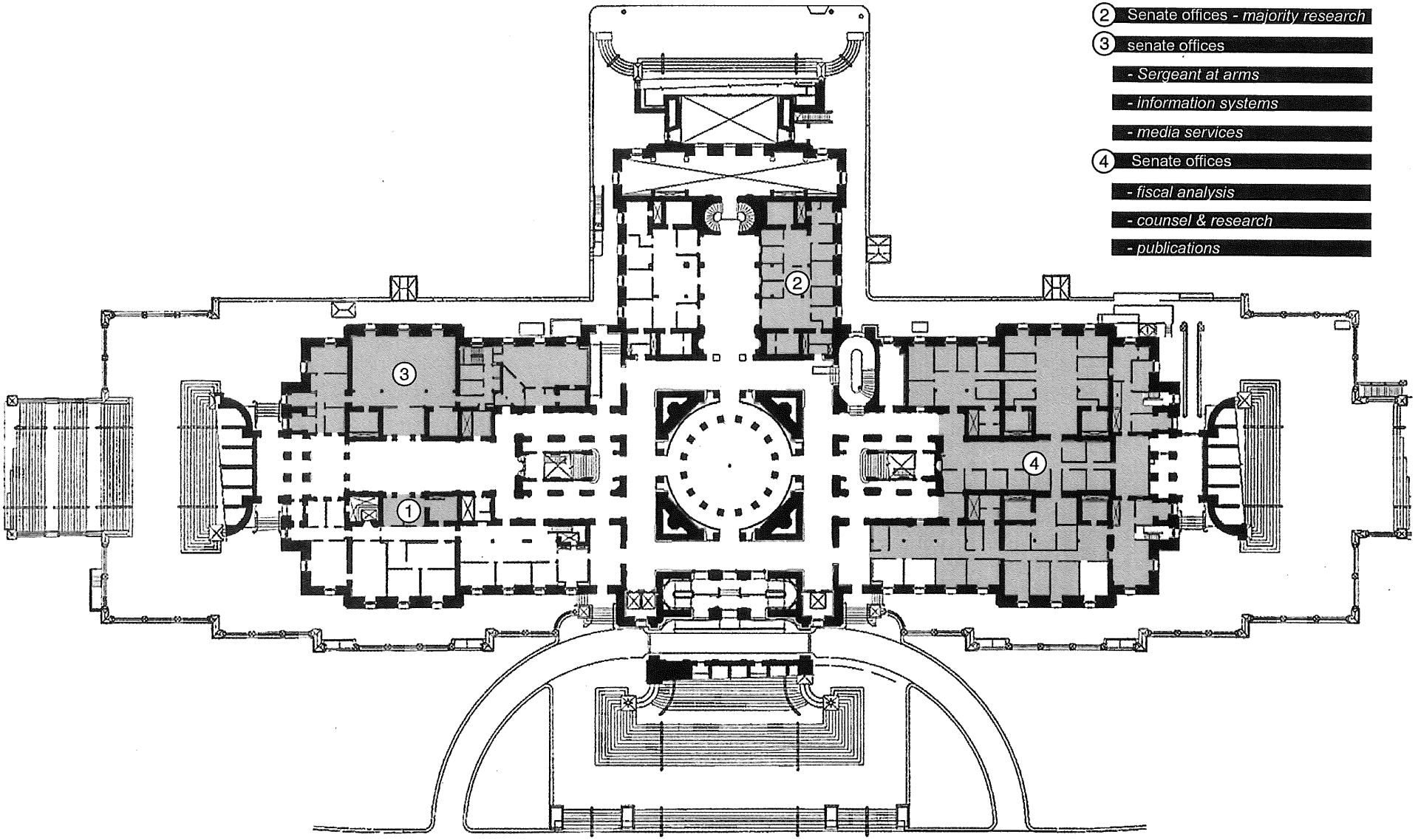
B - b

GROUND FLOOR

TENANTS TO RELOCATE

KEY PLAN

tenant	Outside MSC within MSC
1 Senate offices - *engrossing*	
2 Senate offices - *majority research*	
3 senate offices	
- *Sergeant at arms*	
- *information systems*	
- *media services*	
4 Senate offices	
- *fiscal analysis*	
- *counsel & research*	
- *publications*	



MILLER DUNWIDDIE
ARCHITECTURE / PRESERVATION
123 North Third St., Suite 104
Minneapolis, MN 55401-1657
tel 612.337.0000 fax 612.337.0031

Project:
MINNESOTA STATE CAPITOL PREDESIGN STUDY
Ground Floor Plan, relocation of existing tenants

Project Location: St. Paul, Minnesota

COMMISION NO.: MIN0002
DATE: JUNE 2001
Not to Scale

DRAWING NO.:
G - a

GROUND FLOOR
PROPOSED TENANT LOCATION

KEY PLAN

REMAINING TENANTS

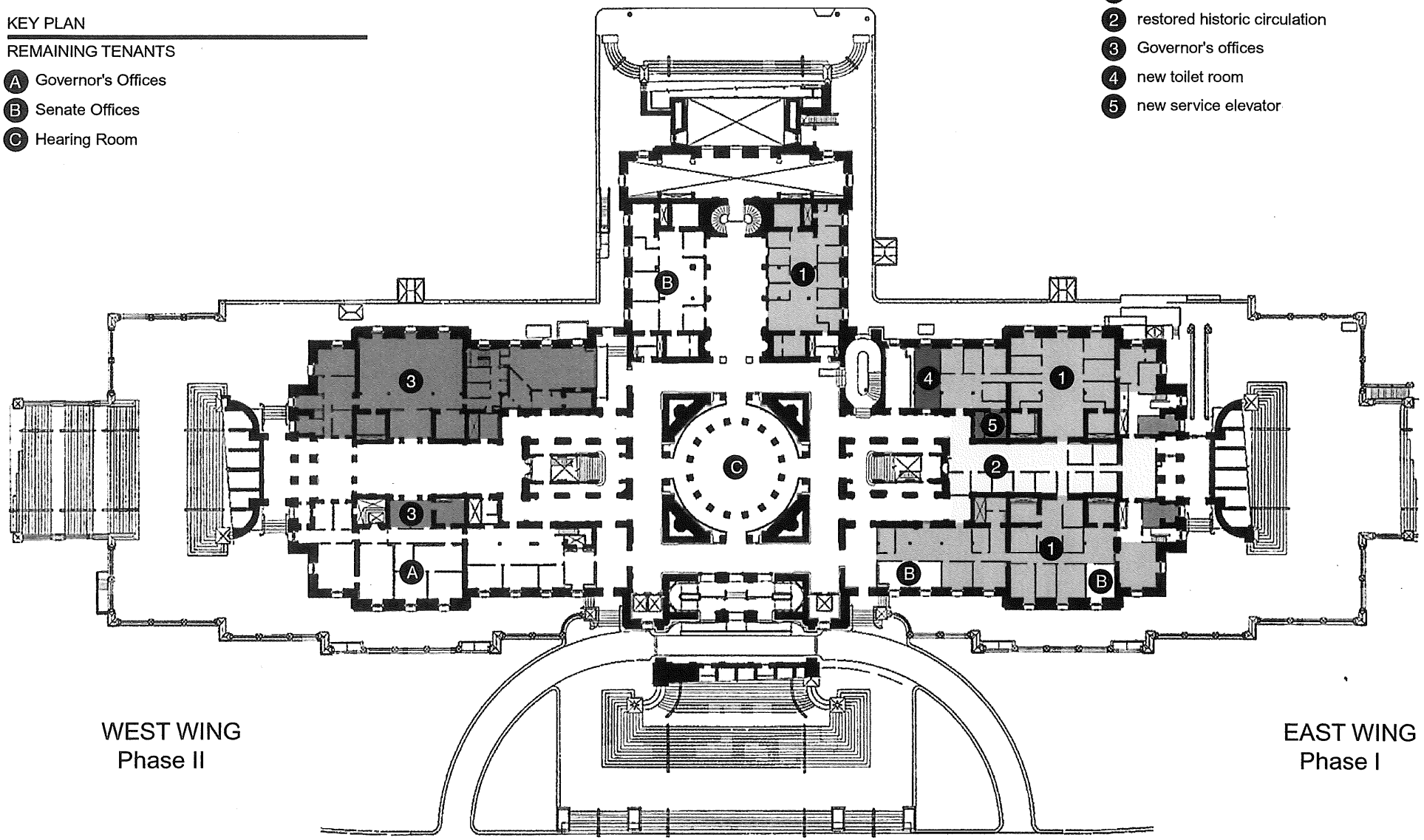
- A Governor's Offices
- B Senate Offices
- C Hearing Room

NORTH WING /CENTER
Phase III

KEY PLAN

RELOCATED TENANTS

1. Senator's office suites
2. restored historic circulation
3. Governor's offices
4. new toilet room
5. new service elevator



WEST WING
Phase II

EAST WING
Phase I

MILLER DUNWIDDIE
ARCHITECTURE / PRESERVATION
123 North Third St., Suite 104
Minneapolis, MN 55401-1657
tel 612.337.0000 fax 612.337.0031

Project:
MINNESOTA STATE CAPITOL PREDESIGN STUDY
Ground Floor Plan, proposed locations of tenants

Project Location: St. Paul, Minnesota

COMMISION NO.: MIN0002
DATE: JUNE 2001
Not to Scale
Revised Sept. 2001

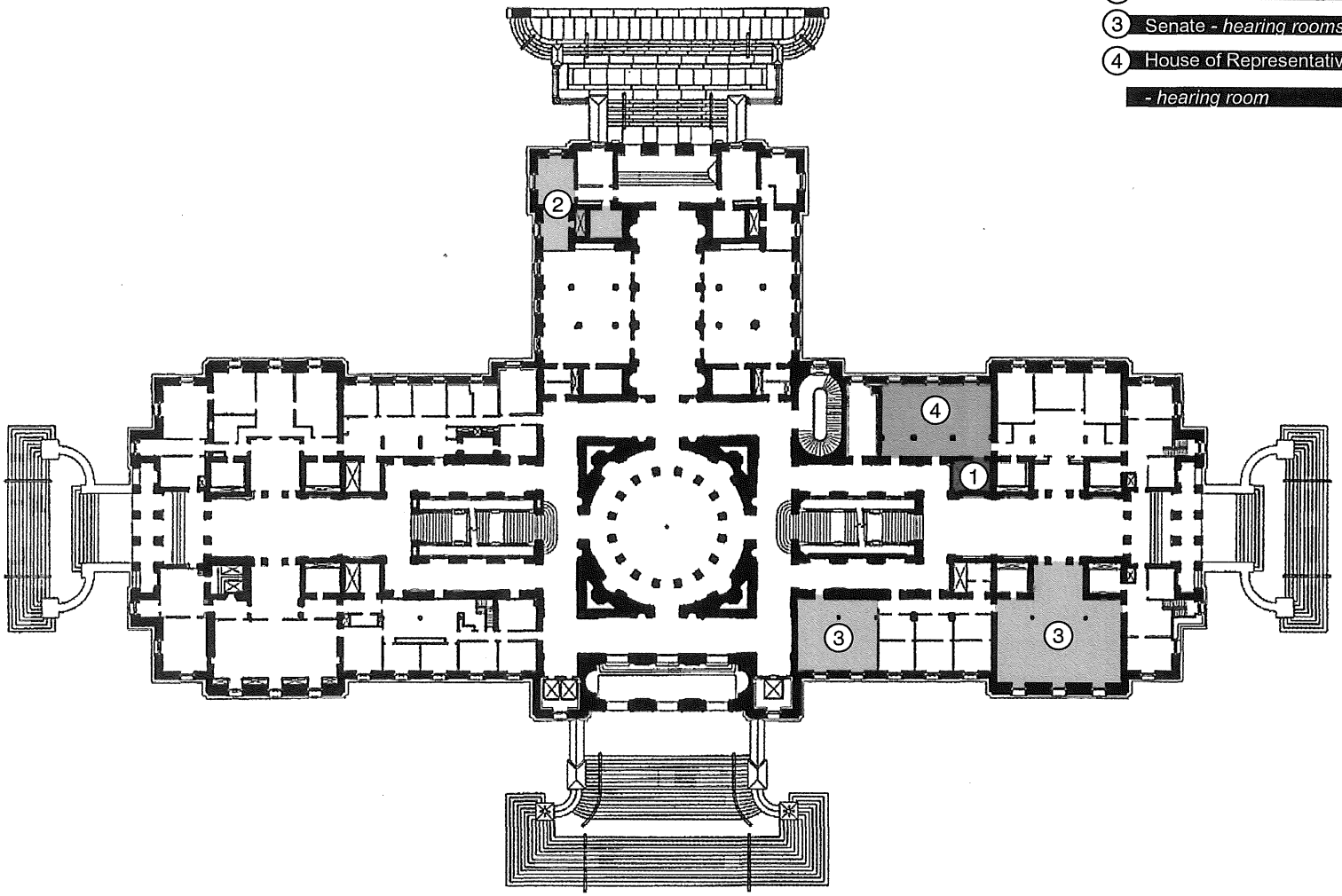
DRAWING NO.:

G - b

FIRST FLOOR
TENANTS TO RELOCATE

KEY PLAN

tenant	Outside MSC within MSC
1	toilet room
2	Senate offices - *index*
3	Senate - *hearing rooms*
4	House of Representatives - *hearing room*



MILLER DUNWIDDIE
ARCHITECTURE / PRESERVATION
123 North Third St., Suite 104
Minneapolis, MN 55401-1657
tel 612.337.0000 fax 612.337.0031

Project:
MINNESOTA STATE CAPITOL PREDESIGN STUDY

Project Location: St. Paul, Minnesota

COMMISION NO.: MIN0002
DATE: JUNE 2001
Not to Scale

DRAWING NO.: **1 - a**

FIRST FLOOR
PROPOSED TENANT LOCATION

KEY PLAN

REMAINING TENANTS

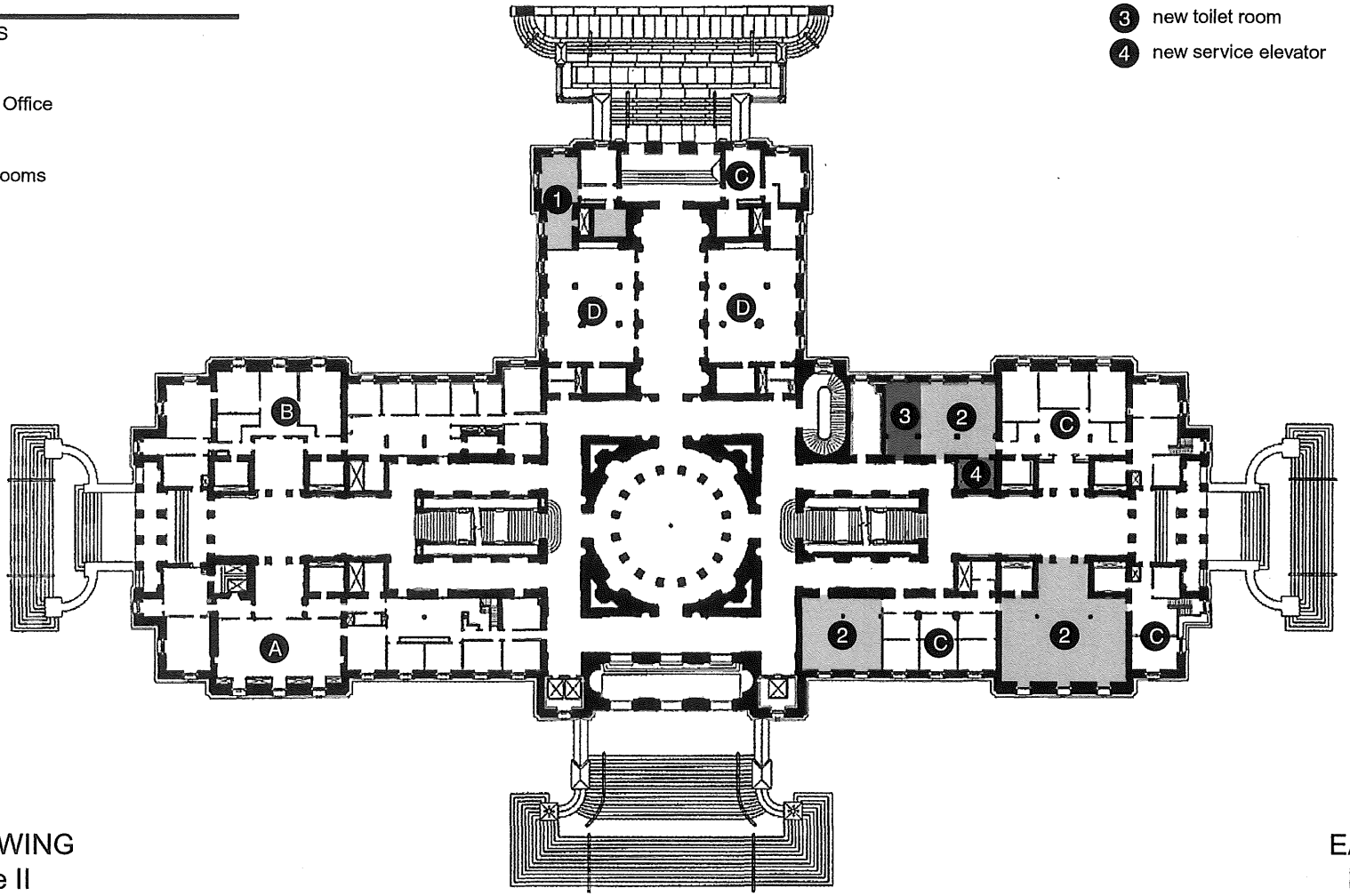
- A Governor's Offices
- B Attorney General's Office
- C Senate Offices
- D Hearing/Meeting Rooms

NORTH WING /CENTER
Phase III

KEY PLAN

RELOCATED TENANTS

1. Senate - *temporary offices*
2. Senator's office suites
3. new toilet room
4. new service elevator



WEST WING
Phase II

EAST WING
Phase I

MILLER DUNWIDDIE
ARCHITECTURE / PRESERVATION
123 North Third St., Suite 104
Minneapolis, MN 55401-1657
tel 612.337.0000 fax 612.337.0031

Project:
MINNESOTA STATE CAPITOL PREDESIGN STUDY
First Floor Plan, proposed locations of tenants

Project Location: St. Paul, Minnesota

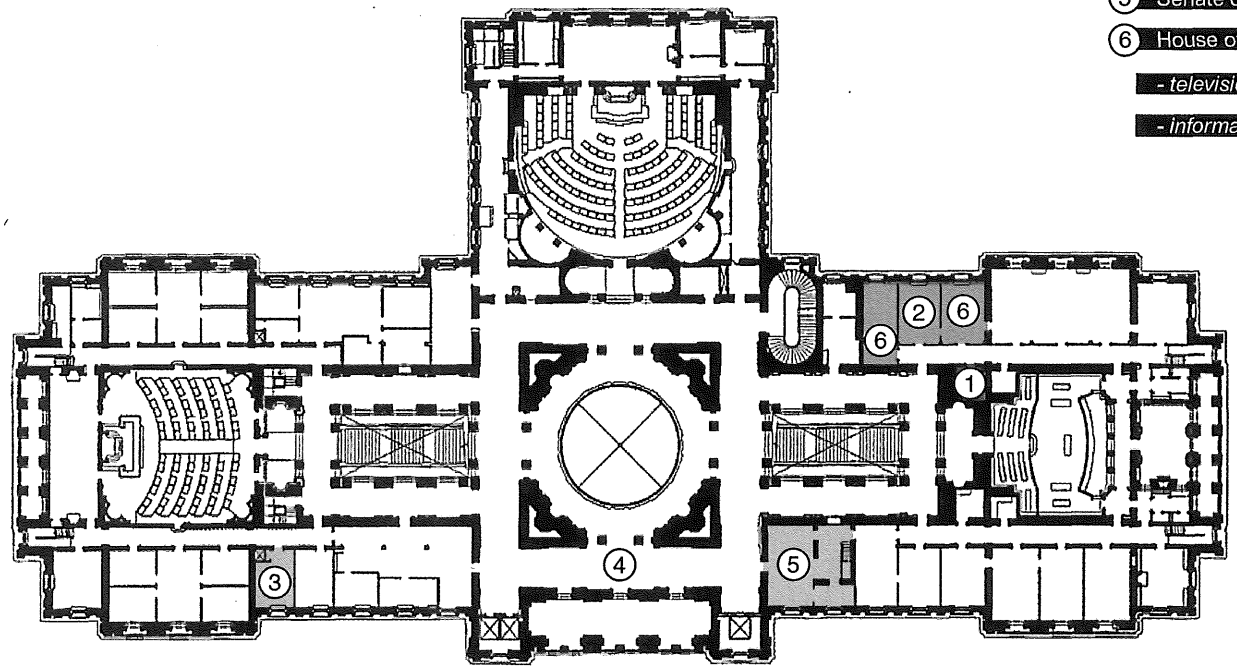
COMMISION NO.: MIN0002
DATE: JUNE 2001
Not to Scale
Revised Sept. 2001

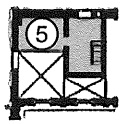
DRAWING NO.:
1 - b

SECOND FLOOR
TENANTS TO RELOCATE

KEY PLAN

tenant	Outside MSC within MSC
1	toilet room
2	House of Representatives offices
	- sergeant at arms
3	Senate Offices- *human resources*
4	Services for the Blind
5	Senate offices - fiscal services
6	House of Representatives offices
	- television
	- information services





second floor mezzanine

MILLER DUNWIDDIE
ARCHITECTURE / PRESERVATION
123 North Third St., Suite 104
Minneapolis, MN 55401-1657
tel 612.337.0000 fax 612.337.0031

Project:
MINNESOTA STATE CAPITOL PREDESIGN STUDY

Project Location: St. Paul, Minnesota

COMMISION NO.: MIN0002
DATE: JUNE 2001
Not to Scale

DRAWING NO.: **2 - a**

SECOND FLOOR
PROPOSED TENANT LOCATION

KEY PLAN

REMAINING TENANTS

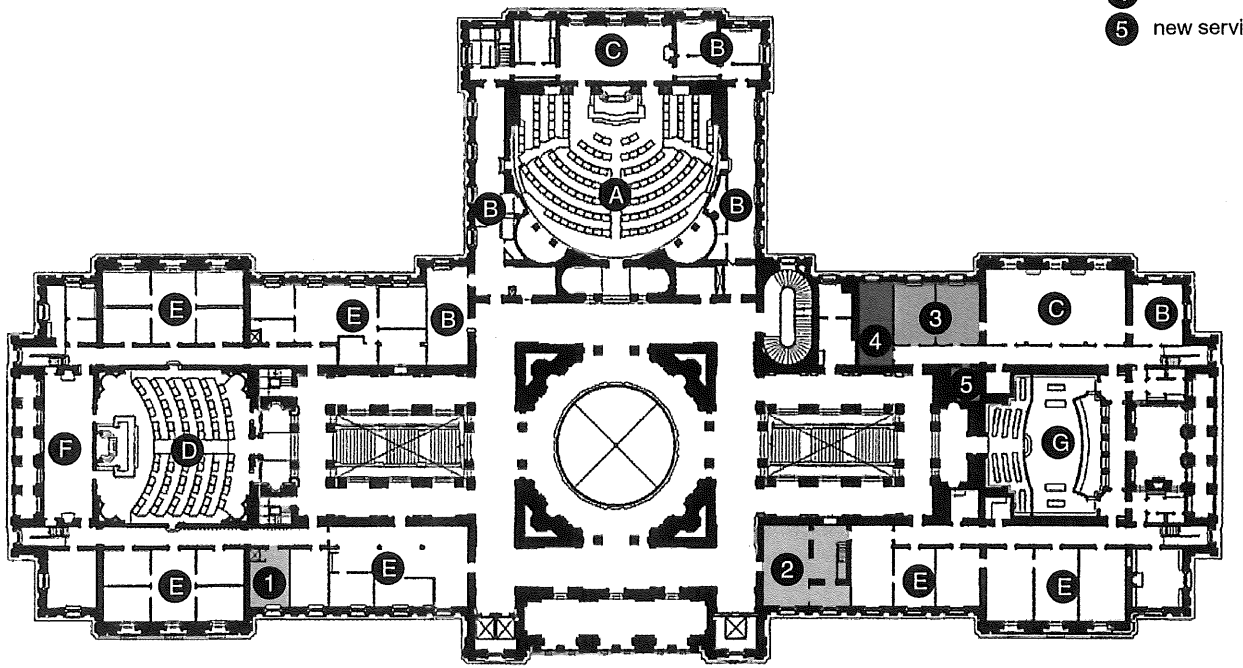
- A House Chamber
- B House Offices
- C House Meeting Rooms
- D Senate Chamber
- E Senate Offices
- F Senate Meeting Rooms
- G Supreme Court Chamber

NORTH WING /CENTER
Phase III

KEY PLAN

RELOCATED TENANTS

1. Senate office
   - *Secretary of the Senate (expanded)*
2. Senate office - *human resources*
3. House of Representatives
   - *meeting rooms*
4. new toilet room
5. new service elevator



WEST WING
Phase II

second floor mezzanine

EAST WING
Phase I

MILLER DUNWIDDIE
ARCHITECTURE / PRESERVATION

123 North Third St., Suite 104
Minneapolis, MN 55401-1657

tel 612.337.0000 fax 612.337.0031

Project:
MINNESOTA STATE CAPITOL PREDESIGN STUDY
Second Floor Plan, proposed locations of tenants

Project Location: St. Paul, Minnesota

COMMISION NO.: MIN0002

DATE: JUNE 2001

Not to Scale

Revised Sept. 2001

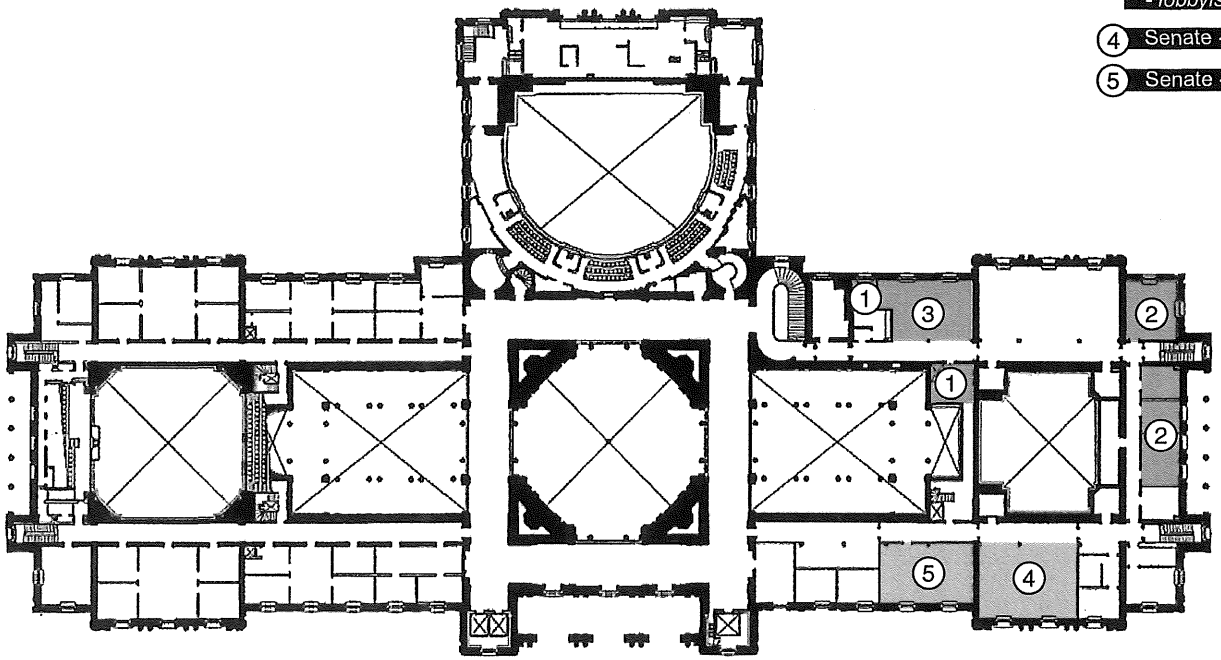
DRAWING NO.:

2 - b

THIRD FLOOR
TENANTS TO RELOCATE

KEY PLAN

tenant	Outside MCS within MSC
1 House of Representatives	
- storage	
2 House of Representatives offices	
- television	
3 House of Representatives	
- lobbyist room	
4 Senate - *hearing room*	
5 Senate - *training room*	



MILLER DUNWIDDIE
ARCHITECTURE / PRESERVATION
123 North Third St., Suite 104
Minneapolis, MN 55401-1657
tel 612.337.0000 fax 612.337.0031

Project:
MINNESOTA STATE CAPITOL PREDESIGN STUDY

Project Location: St. Paul, Minnesota

COMMISION NO.: MIN0002
DATE: JUNE 2001
Not to Scale

DRAWING NO.:
3 - a

THIRD FLOOR
PROPOSED TENANT LOCATION

NORTH WING /CENTER
Phase III

KEY PLAN

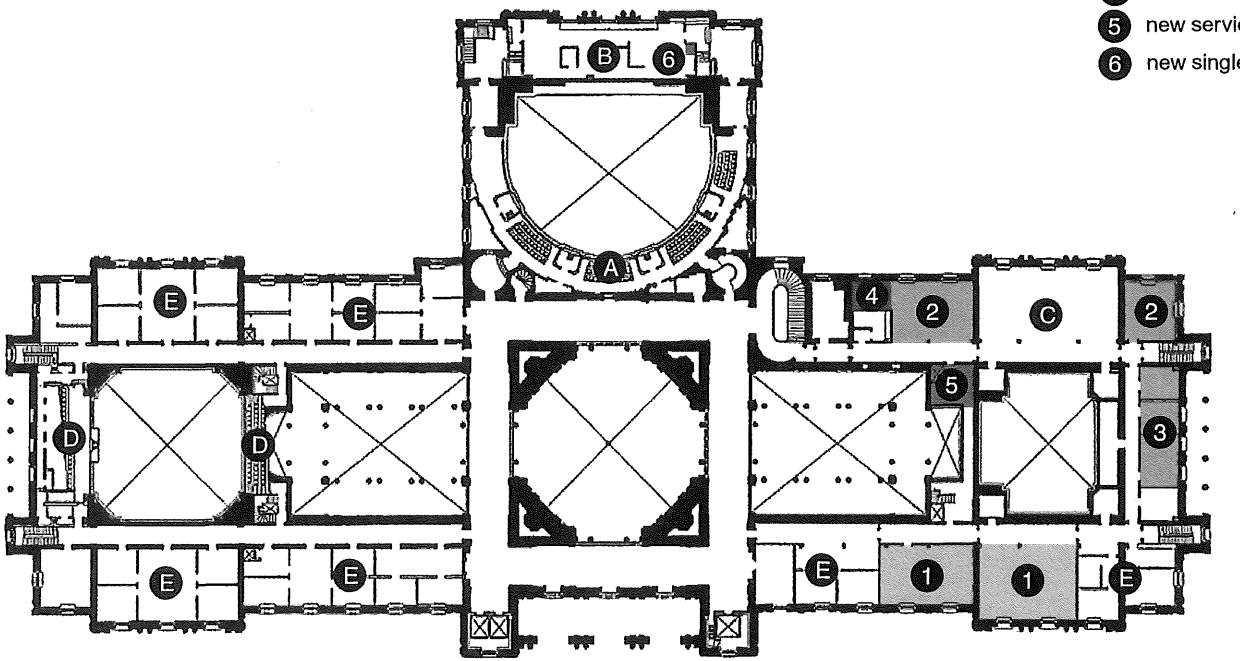
REMAINING TENANTS

- A House Gallery
- B House Offices
- C House Meeting Rooms
- D Senate Galleries
- E Senate Offices

KEY PLAN

RELOCATED TENANTS

1. Senator office suites
2. *House of Representatives* - temporary offices
3. House of Representatives - *meeting rooms*
4. new toilet room
5. new service elevator
6. new single passenger elevator



WEST WING
Phase II

EAST WING
Phase I

MILLER DUNWIDDIE
ARCHITECTURE / PRESERVATION
123 North Third St., Suite 104
Minneapolis, MN 55401-1657
tel 612.337.0000 fax 612.337.0031

Project:
MINNESOTA STATE CAPITOL PREDESIGN STUDY
Third Floor Plan, proposed locations of tenants

Project Location: St. Paul, Minnesota

COMMISION NO.: MIN0002
DATE: JUNE 2001
Not to Scale
Revised Sept. 2001

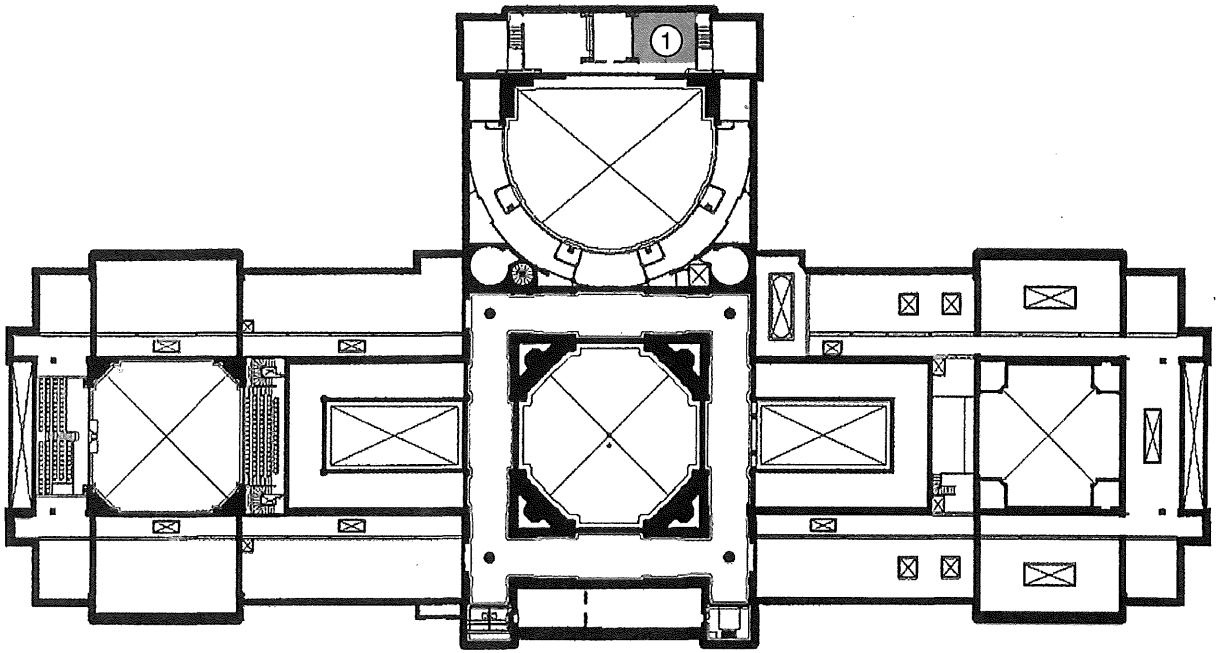
DRAWING NO.:

3 - b

FOURTH FLOOR
TENANTS TO RELOCATE

KEY PLAN

tenant	Outside MSC within MSC
1 House of Representatives	
- *meeting room*	



MILLER DUNWIDDIE
ARCHITECTURE / PRESERVATION
123 North Third St., Suite 104
Minneapolis, MN 55401-1657
tel 612.337.0000 fax 612.337.0031

Project:
MINNESOTA STATE CAPITOL PREDESIGN STUDY

Project Location: St. Paul, Minnesota

N

COMMISION NO.: MIN0002
DATE: JUNE 2001
Not to Scale

DRAWING NO.:
4 - a

FOURTH FLOOR
PROPOSED TENANT LOCATION

KEY PLAN

REMAINING TENANTS

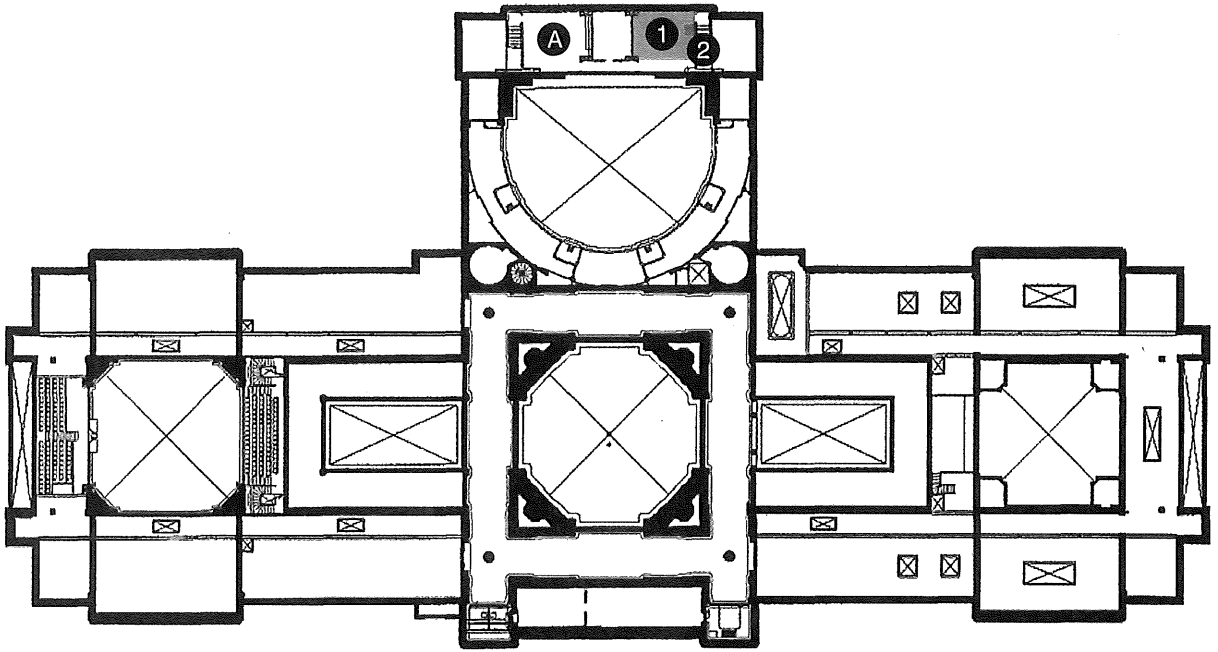
Ⓐ House Meeting Room

NORTH WING /CENTER
Phase III

KEY PLAN

RELOCATED TENANTS

1. House of Representatives
   - *temporary offices*
2. new single passenger elevator



WEST WING
Phase II

EAST WING
Phase I

MILLER DUNWIDDIE
ARCHITECTURE / PRESERVATION
123 North Third St., Suite 104
Minneapolis, MN 55401-1657
tel 612.337.0000 fax 612.337.0031

Project:
MINNESOTA STATE CAPITOL PREDESIGN STUDY
Fourth Floor Plan, proposed location of tenants

Project Location: St. Paul, Minnesota

COMMISION NO.: MIN0002
DATE: JUNE 2001
Not to Scale
Revised Sept. 2001

DRAWING NO.:

4 - b

Key Needs:

- **Improved exterior signage in Capitol Area.**
- **Improved signage in historic spaces of the Capitol**
- **Improved signage in non-historic public spaces of Capitol and other Capitol Area Buildings.**

SIGNAGE

Signage is used to inform and orient staff and visitors in a safe and direct manner from the exterior through the interior of a public facility. Insufficient signage on the exterior roadways makes it difficult to identify parking within the Capitol complex. The symmetrical shape and design of the Capitol Building floor plan and similar building finishes in the east and west wings make it difficult for the visitor to orient themselves inside the building. All tenants interviewed commented on the lack of signage and inconsistency in sign styles, both interior and exterior.

PREVIOUS STUDIES AND REVIEWS

In **1988**, Miller-Dunwiddie-Associates reported on the interior signage as part of a *Comprehensive Preservation Plan and Implementation Strategy*. The plan highlighted the following points:

- In 1977, a consultant was hired to develop a consistent and flexible system for the Capitol.
- New signage was added in later years, not conforming to the established system.
- Temporary signs in the Capitol are unavoidable; however, a system should be established to create consistency in style and image.
- Original office doors were numbered with gold leaf numerals in many locations, as per door style.
- Recommendations were made to renumber all doors in the public and ceremonial areas to the gold leaf lettering style.

In **1994**, Visual Communications produced a schematic design document to coordinate and standardize exterior/interior signage and graphics throughout the State Capitol area and its facilities. A complete *Graphic Schematic Sign Design Manual,* which included maps, descriptions, and prototypical drawings, was developed in conjunction with the Capitol Area Architectural Planning Board (CAAPB). The comprehensive manual used the following methodology to design a custom signage package:

- Identification of key user groups: tourists, pedestrians (travelling for service, function, retail, and private destinations) and employees.
- Signage style to blend with both historic and modern buildings on the State Capitol Area.
- Integration of form and function – Integrate with Cass Gilbert's theory of campus elements as an art form.
- Creation of a logo/mark and name.
- Incorporation of design element unique to the building campus and interior.
- Hierarchy of sign sizes and styles with similar architectural elements in each sign type.

- Compliance with ADA accessibility guidelines.
- Flexibility.

Signage prototypes were developed for the following locations:

- Exterior
  - Pathfinder signage (highway)
  - Identification (Capitol area, building function, building entrance)
  - Directional and Informational (Vehicular)
  - Directional and Informational (pedestrian)
  - Parking Directional and Informational (Vehicular)
  - Regulatory

- Interior (Historic, Modern, and Tunnel)
  - Directories (interactive touch screens, static building and campus directories, and maps)
  - Directional and Informational (public areas, offices)
  - Department and Room Identification (agency, department, private offices, meeting rooms...)
  - Building Standards and Informational Signage (restrooms, telephones, stairs)
  - Temporary Signs (use of compatible materials with the building architecture)

In **1998**, Zimmer Gunsul Frasca Partnership completed a *Comprehensive Plan and Implementation for the Minnesota State Capitol*. The documents establish guidelines and specific actions to improve clarity in general, identity, and interpretive signage. The manual also referred to the *Minnesota State Capitol Area Schematic Sign Design Manual, 1994.* Maintenance of the signage systems was encouraged.

CONCLUSIONS

The CAAPB, Division of State Building Construction, Plant Management Division, and the Minnesota Historical Society agreed on a logo, the "Capitol Area" name, standard letter, arrow and symbol sizes and styles. Interior signage was separated in three categories, including a historic style, modern style, and tunnel style. Both the modern and tunnel interior signs were designed to utilize the 'New Hermes Signage' fabricating machine recently acquired by Plant Management.

Although the suggestions for an integrated sign system have been well received, appropriate funding has not been allocated for signage to develop the manual through a final design process. An official adoption of a final design manual is necessary to insure the compliance of signage standards. All recent building projects and restoration work have incorporated interior and exterior signage concepts from the schematic design sign manual. The manual is currently under review by the CAAPB, the Division of State Building Construction, the Plant Management Division, and the Minnesota Historical Society.

OTHER CRITERIA

The entire signage package should be reviewed to meet specific performance requirements including:

- Building and life safety codes, ADA accessible guidelines, and regulatory standards
- Building needs
- Durability
- Flexibility
- Readability (letter style, colors, and copy position/ proportion)
- Copy (message clarity)
- Historic character
- Mounting style and location
- Promotional signs (cafeteria, exhibits, and temporary events)

INTRODUCTION

The predesign needs summaries and spreadsheets are divided into two main areas:

- **Public Needs**
  This covers the needs for the public and ceremonial spaces as well as other general areas of the Capitol. The public and ceremonial spaces are those spaces defined as such in the *Policy for Works of Art in the Minnesota State Capitol*, Capitol Area Architectural and Planning Board, December 1998. The primary consideration in these spaces is the restoration and maintenance of the historic character.

- **Tenant Needs**
  The tenant spaces are the offices and other areas that are assigned to a tenant group by Real Estate Management. The primary consideration in these spaces is the needs of the people working there.

In some cases, a space is used by both the tenants and the public. For example, the Governor's anteroom is an office space for a receptionist and it is also a historically significant room and part of the MHS tours of the building. In these cases, the space is discussed in both areas. The function as a workspace is discussed in the tenant needs summary, and the public use and the historic aspects are discussed in the public needs summary.

The information on the tenant needs was gathered from the tenants by surveys, interviews, and from site visits to the workspaces. The information was then put into spreadsheets and a summary was written for each tenant. These were then given to the tenants for review and comment. A summary of the information found in the spreadsheets can be found on the following page.

For information on the public needs see Appendix B.

INDEX TO APPENDIX C

The spreadsheets contain the specific needs of the tenants. For easy reference, the spreadsheet headings are defined below:

Division/ Space - identifies sub divisions or general space within tenant groups

Area/ Function - identifies specific areas or functions within tenant groups

Description of Area/ Function – describes the area or function identified

Current Location (Bldg, room) – identifies building Capitol Building (MSC) or State Office Building (SOB) and room number

Notes for Size - Workstation standards prepared by the Department of Administration were used to compare existing workstation sizes to anticipated workstation sizes. The workstation standards were distributed as part of the survey form. Standards were assigned a code as shown to the right.

Adjacencies – proximity to other tenants

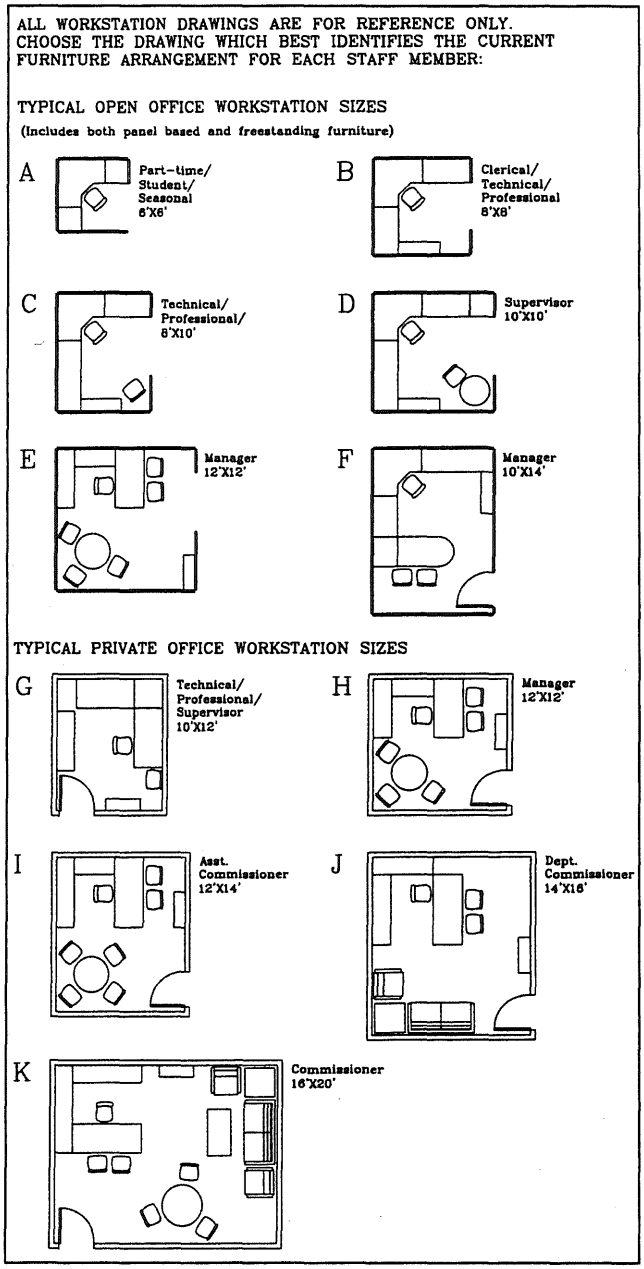
- Internal – within the tenant group
- Capitol Building – with other tenant groups in the building

Security – criteria or security issues of concern

Historical Significance – original features to the building

Technological Requirements – criteria or technological requirements for the division/ space

Additional Comments – other criteria for the division/ space



Key Needs:
- **Co-locating approximately 400 staff, who are currently located in satellite offices.**
- **Maintaining executive offices in Capitol Building.**

Enabling legislation: State Constitution KFM5801-1857.A3
Occupied square footage: 5,405 sq. ft.
Capitol staff count: 22
Total staff count: 456

TENANT DESCRIPTION

The primary responsibilities of the Attorney General's Office are:
- Enforcing laws
- Representing state agencies
- Defending the state against claims

OFFICE SPACE

The executive offices of the Attorney General have remained in their historic location on the first floor west wing of the Capitol. The tenant believes this location is beneficial because of its public accessibility. The tenant has expressed a desire to bring together approximately 400 staff that are currently located in satellite offices.
Current staff counts include 22 positions in the executive office, which can be divided into the following four groups:

Attorney General – Current staff count is four positions, including the Chief Legal Officer and three support staff. The division schedules and supports the Attorney General. Meetings generally involve group press conferences, held as often as 10 times a week in the conference room.

Executive Assistant – Current staff count is nine positions. Responsibilities include administrative support, community action, constituent aid and public reception to the Attorney General's executive office. Interaction with the general public is critical. The division uses the conference room for staff meetings.

Administrative Office – Current staff count is four positions. The division is responsible for budgeting and accounting, support, timekeeping and building activities for both the Capitol and satellite Attorney General offices. Staff meetings occur approximately once a month.

Fiscal Services – Current staff count is five positions. The division is responsible for budgeting, purchasing and payments for both staff in the Capitol and satellite Attorney General's offices. Vendor meetings are held within the office area about twice a week.

Shared Space

Conference Room – Currently accommodates 12 people seated or 40 people standing. Storage space is available for books and coffee, however, there is insufficient space for presentation equipment.

FIVE DIVISIONS OF THE ATTORNEY GENERAL'S OFFICE

The executive offices oversee the following five divisions of the Attorney General's Offices. The five divisions are currently located in satellite offices. There is a desire to locate all of the five divisions together.

- Solicitor General Division
- Civil Enforcement Division
- Government Regulation Division

Current staff count is approximately 250 positions, between five floors at:
NCL Tower
445 Minnesota Street, St. Paul, MN 55101
Suites 700, 900, 1100, 1200, 1400

- Public Protection Division
- Government Services Division

Current staff count is approximately 150 positions, between two floors at:
Park Building
525 Park Street, St. Paul, MN 55103
Suite 200 and Suite 500.

Some of the Attorney General's staff are located in the agency offices. These people need to remain at these agency locations.

Minnesota Department of Revenue Building
600 Robert Street North, St. Paul, MN 55146

Current staff count is 14 positions, located on the 4th floor

Minnesota Housing Finance Agency
400 Sibley Street, Suite 300, St. Paul, MN 55101

Current staff count is three positions

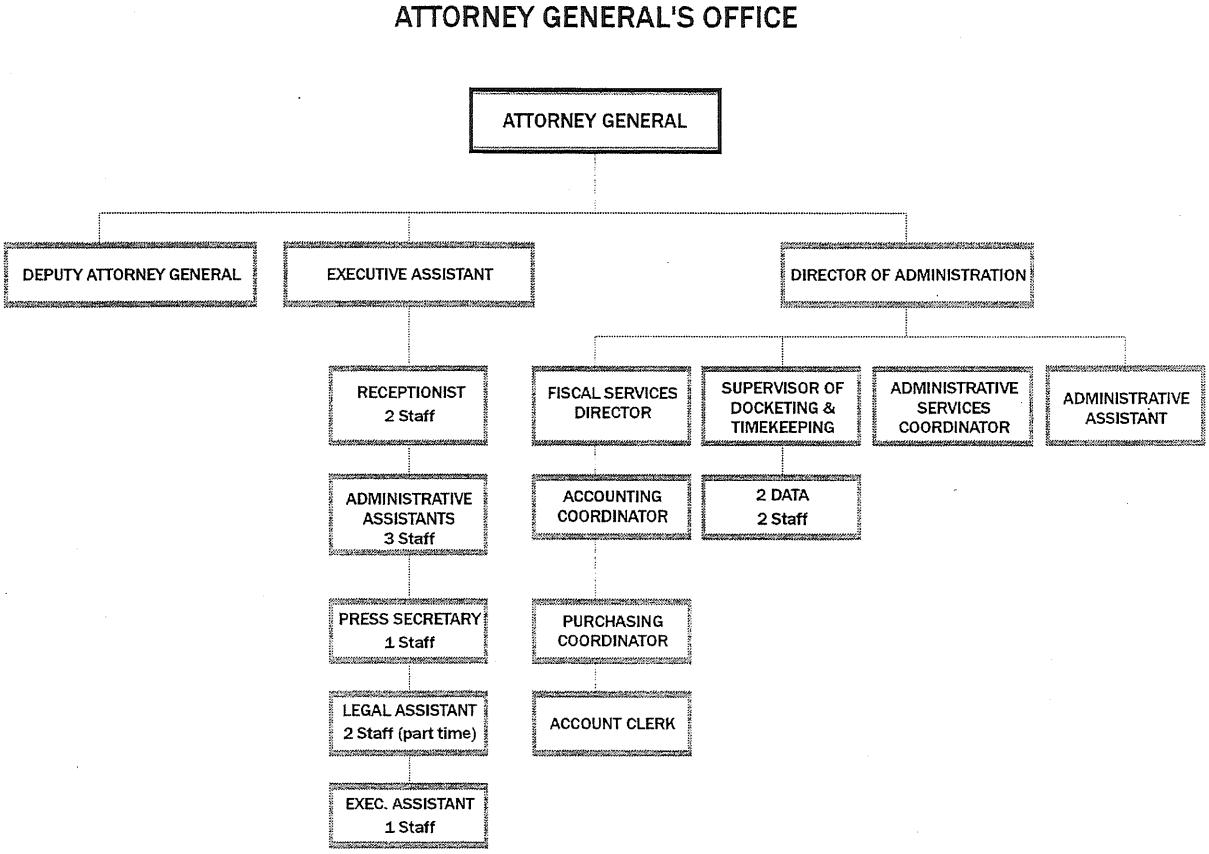
HISTORICAL SPACES

- Attorney General's Anteroom (public and ceremonial space)
- Attorney General's Office (private workspace)

OTHER CRITERIA

- **HVAC** – There is poor air circulation and uneven heating and cooling within all offices. Air is dry in the winter. Windows allow in air drafts.
- **Lighting** - Appropriate lighting recommended for historic artwork, task lighting is used in rooms with high ceilings
- **Electrical** - Electrical panels, which control east office lighting, are located in another tenant's space.
- **Security** - Confidential files are located in existing locked cabinets, locked file room and locked offices.
- **Recycling** - The office shares two standard containers: one for paper, and one for glass and cans.

ORGANIZATIONAL CHART



Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Attorney General	Private office	Attorney General (1)	MSC, #101B	K (1)	Immediate access to Deputy AGO Office	Public presence required in the Capitol	Late hours and weekend access for staff	X		N/A	Urinal from toilet room above overflows to Attorney General's Office. This office has the only two original wood windows
Deputy Attorney General	Private office	Deputy Attorney General (1)	MSC, #102D	J (1)	Immediate access to AGO	Public presence required in the Capitol			X	N/A	-
Executive Asst.	Private office	Executive Assistant (1), Press Secretary (1)	MSC, #102A / #101	H (2)	Convenient access to AG	N/A			X	N/A	-
	Open workstation	Administrative Assistant (3), Legal Assistant (2)	MSC, #101A / #102E-F	B (5)	Convenient access to AG and Deputy AG	N/A			X	N/A	-
	Reception workstation	Receptionist (2)	MSC, #102	A (2)	Convenient access to AG, Deputy AG, and conference	Adjacent to entry	Open to public M-F, 8am-5pm		X	N/A	Formal waiting area, seats (4), display
Administration	Private office	Director of Administration (1)	MSC, #103D	J (1)	Convenient access to staff and AG	N/A			X	N/A	Plastic shield is installed to redirect air drafts from window.
	Private office	Fiscal Services Director (1), Supervisor of Docketing/ Timekeeping (1), Administrative Services Coordinator (1), Accounting Coordinator (1)	MSC, #103E / #103C / #104A / #104C	H (4)	Convenient access to staff	N/A			X	N/A	-
	Open workstation	Purchasing Coordinator (1), Accounting Clerk	MSC, #104B	C (2)	Immediate access to fax/ printer	N/A			X	N/A	-
	Open workstation	Data Entry (2), Administrative Assistant (1)	MSC, #103	B (3)	Accessible to admin. staff	N/A			X	N/A	-

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Shared Space	Anteroom	Primary reception area for Attorney General's office, location of full time receptionists	MSC, #102	-	Accessible to staff	Accessible to public	Open to public M-F, 8am-5pm	X		N/A	Seating required for 4 people.
	Conference room	Conference/ meeting room, used often for press conferences	MSC, #102G / #102H	12 seated or 40 standing	Convenient access to Private offices	Accessible to public	N/A		X	Telephone conferencing, Power Point presentations, Power sources for media cabling & equipment	Need storage for A/V equipment in conference room. Also using conference rooms in other AG offices in Park Building and NCL Tower.
	Recycling	For paper, cans/bottles	MSC, #103G	-	Central to AG offices	N/A	N/A		X	N/A	-
	File room	Legal records	MSC, #103H	-	Central to AG offices	N/A	Confidential material		X	N/A	Files archived offsite
	Copier/ supply room	Copy machine, supplies	MSC, #102K	-	Central to AG offices	N/A	N/A		X	N/A	-
	Mail area	Mail distribution	MSC, #103	-	Central to AG offices	N/A	N/A		X	N/A	-
	Data closet	Computer, telephone	MSC, #103B	-	Central to AG offices	N/A	N/A		X	N/A	-
	Restroom	Internal restroom in AG offices	MSC, #103A	2 stalls, 2 urinals	Central to AG offices	N/A	N/A		X	N/A	Poor water pressure
	Misc. storage	Division materials	Offsite	-	N/A	N/A	N/A		X	N/A	Located in Records Retention Center, shared with other AGO staff

Notes: Other office spaces for the Attorney General include: Park Building, NCL Tower, Revenue Building and Housing Finance.

Key Needs:
- **A direct path to the café**
- **Directional and promotional signage**

Enabling legislation: Minnesota Statutes, Chapter 16B.875
Occupied square footage: 5,745 sq. ft.
Capitol staff count: 7
Total staff count: 7

TENANT DESCRIPTION

The Rathskeller was restored in 1999 to a café style restaurant. The current tenant is the Capitol Café. The Rathskeller is located in the north end of the basement with a capacity of 92 seats. A handicap accessible kitchen and servery were added underneath the north terraces.

The Capitol Café is the only restaurant in the Capitol Building, with hours from 8 a.m. to 2 p.m. in the interim and 8 a.m. to 4 p.m. during the legislative session. Several tenants have expressed a desire to have the café open longer hours. However, this would require an additional shift of staff and therefore would not be profitable.

The route to the Capitol Café is indirect and unclear. Those who are unfamiliar to the building often have difficulty locating the Café.

The minor hallway leading to the Rathskeller was also remodeled with new lighting, finishes and built-in spaces for vending, recycling and publications.

HISTORIC SPACES

- Rathskeller (dining area)

OTHER CRITERIA

- **Acoustics** – The restoration of the Rathskeller returned the original hard surfaces to floors, walls, and ceiling. The hard surfaces have resulted in higher levels of sound reverberation. This condition is most evident during the legislative session, when the Capitol Café reaches its highest occupancy. Providing sound absorbing panels or other sound absorbing methods would alter the historic character of the space and are therefore not recommended.
- **Signage** - Better directional signage to the café is needed, as visitors have difficulty locating the Rathskeller. The tenant also desires exterior signage to the café.
- **Visitor Parking** - There is no dedicated parking for Capitol Cafe patrons. The patrons must find parking where they can around the Capitol complex and walk long distances to get to the Rathskeller.
- **Staff parking** – Capitol Café staff frequently need to make emergency trips for food or cash during the day. They have to park far from the café, making the trips less efficient.

- **Deliveries** - Delivery people have difficulty locating the Rathskeller and the appropriate delivery route. The freight elevator is too small to accommodate standard sized delivery pallets. Deliveries are, therefore, made on smaller size carts or through the main public elevators.

Key Needs:
- **A newly designed facility meets this tenant's current operational needs.**

Enabling legislation: Minnesota Statutes, Chapter 299E
Occupied square footage: 7,103 sq. ft.
Capitol staff count: 53
Total staff count: 62

TENANT DESCRIPTION

The Capitol Security office is a branch of the Minnesota State Patrol. They provide security and protection for the Governor, Governor Elect, legislature, 34 state buildings (including the Capitol Complex and other state buildings), and 22 parking facilities.

OFFICE SPACE

Capitol Security moved their operations into a newly remodeled basement office space in January 2001. The office space was designed to meet the division's growing needs. New accommodations include private offices and workstations, photography area, computer room, break room, training room/meeting room, dispatch and security monitoring center, locker rooms, and a secondary entrance.

Capitol Security can be divided into two sections: 'in-house' Capitol Security and Executive Protection.

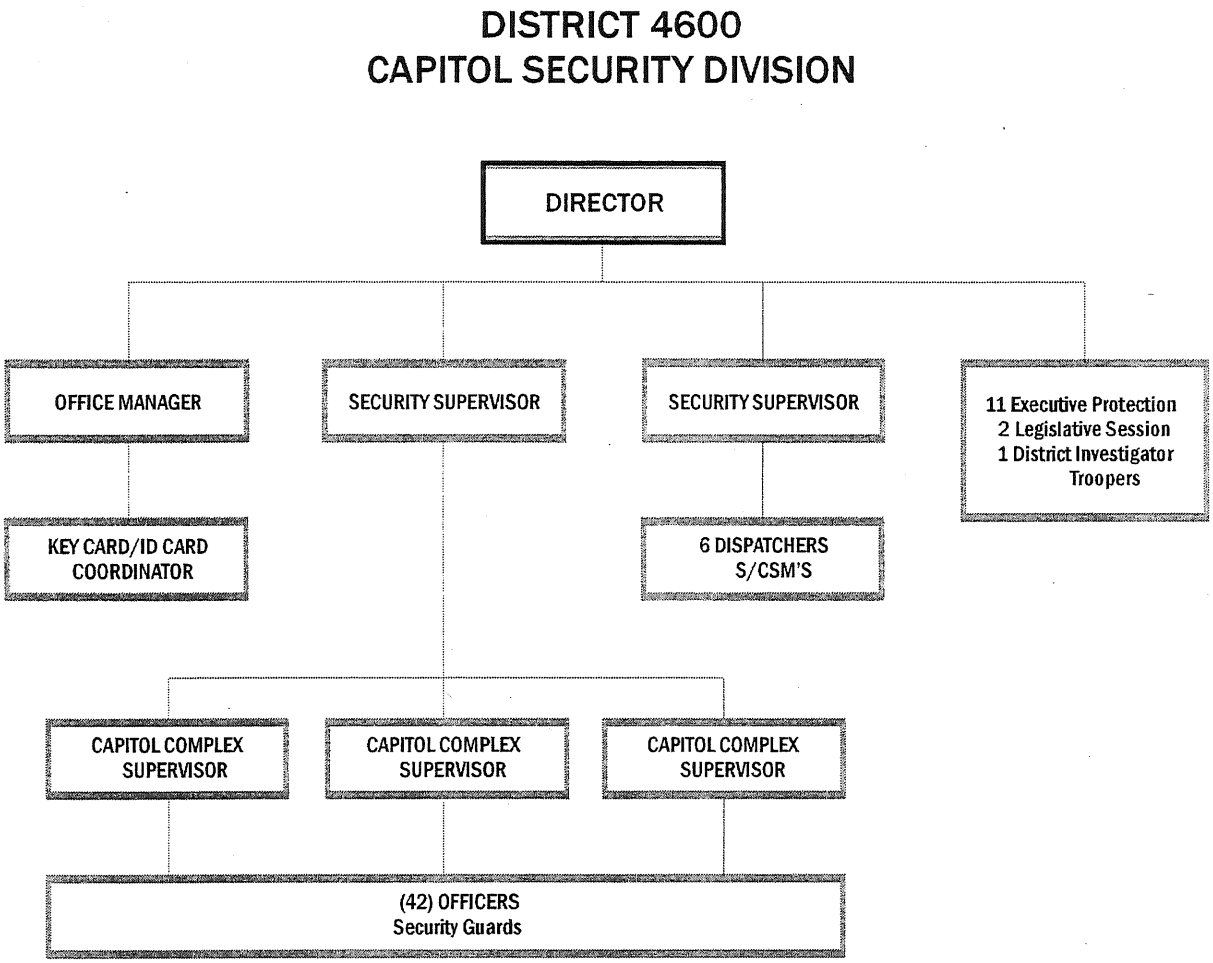
'In House' Capitol Security - Current staff count is 57 positions including security officers, non-sworn managers and clerical staff. The division provides all safety and security requirements for elected officials and employees in the Capitol Building. Capitol Security operates a central emergency communications center 24 hours per day, seven days per week, that provides information and responds to alarms. Capitol Security is responsible for registering and issuing identification cards and keycards for all offices in the Capitol complex. Typical meetings include staff meetings with officers (15 to 30 people) four times a year, senior staff (six to seven people) weekly and defensive training (eight to ten people) four times a year. Defensive training requires padding on the floor for self-defense demonstrations. All meetings require use of presentation tools and equipment. State employees visit the division to receive identification cards and keycards, and for defensive training classes.

Executive Protection - Current staff count is 11 employees including state troopers, state patrol officers and a captain. The division is responsible for the protection and security of the Governor's family, private residence and official residence. Only two of the 11 employees have office space in the State Capitol. Remaining employees have offices in the Governor's official residence. Shared office spaces have been provided at the Capitol for these staff to use when they are at the Capitol.

OTHER CRITERIA

- **HVAC** – HVAC operates 24 hours a day, seven days a week. Emergency power is required for HVAC systems, lighting, and computers. The dispatch center requires light dimming controls to set appropriate light levels for monitor viewing. The new offices are supplied with a new, dedicated HVAC unit.
- **Security** – Security within the office spaces is high. Locked doors prohibit visitors from going beyond the lobby and photography area. The dispatch center is a high tech security control room that houses monitors that display camera locations throughout the Capitol complex. Confidential documents are stored in metal file cabinets within a locked file room. Additional rooms include storage for uniforms, equipment, evidence, and property.
- **Recycling** – Requirements: The office shares two standard containers, one for paper and one for glass and cans.

ORGANIZATIONAL CHART



Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Director Office Space	Private office	Captain (1)	MSC, #B5-M	H (1)	Immediate access to Security Supervisors	Convenient proximity to Capitol tenants	High Security (secured from reception area)		x	N/A	ADA accessible workspace and shared space is required for entire department.
Office Manager Space	Private office	Office Manager (1)	MSC, #B5-N	G (1)	Adjacent to Captain and reception	Convenient proximity to Capitol tenants	High Security (secured from reception area)		x	N/A	
	Open workstation	Key/ ID Card Coordinator (1)	MSC, #B5-K	C (1)	Adjacent to entry, convenient access to Office Manager	Convenient proximity to Capitol tenants	High Security (secured from reception area)		x	N/A	
	Open workstation	Temporary help (1)	MSC, #B5-K	A (1)	Adjacent to Key/ID Card Coordinator	Convenient proximity to Capitol tenants	High Security (secured from reception area)		x	N/A	Used by Officers/ Guards/ Executive Protection as necessary.
Security Office Space	Private office	Security Supervisors (2)	MSC, #B5-P / #BI-J	G (2)	Immediate access to Director, reception, operations center	Convenient proximity to Capitol tenants	High Security (secured from reception area)		x	N/A	
	Open workstation	Sergeants (3)	MSC, #BI-K	D (3)	Internal to Capital Security division	Convenient proximity to Capitol tenants	High Security (secured from reception area)		x	N/A	
	Open workstation	IT (2)	MSC, #BI-H	B (2)	Immediate access to Dispatch	Convenient proximity to Capitol tenants	High Security (secured from reception area)		x	Intensive requirements-security technology	
Dispatch Office Space	Open workstation	Dispatch (2)	MSC, #BI-E	D (2)	Immediate access to IT, restroom	Convenient proximity to Capitol tenants	High Security (secured from reception area)		x	Intensive requirements-camera/ security equipment	

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Executive Protection Office Space	Open workstation	Investigator (1), Legislative session (2), Temporary help (1)	MSC, #BI-K	D (4)	Internal to Capitol Security	Convenient proximity to Capitol tenants	High Security (secured from reception area)		x	N/A	(11) staff total within Executive Protection, however only (2) employees occupy space at the capitol.
Shared Space	Reception Area	ID Card photo area, reception	MSC, #B5-B		Key/ID Card Coordinator. Public access	Convenient proximity to Capitol tenants	Public access prohibited past reception area		x	Photo equipment	
	Conference room	Training, Staff meetings, seats max. 30	MSC, #B5-D	Seat 30 people	Central to Capitol Security	N/A	Secured from main entry		x	TV/ VCR	Large closets required for equipment storage/ training materials, floor pads.
	Property Room	Lost & found	MSC, #B5-Q		Adjacent to Key/ID Card Coordinator	N/A	Secured from main entry		x	N/A	
	Bike Room	Bike storage	MSC, #B5-G		N/A	Adjacent to entry	Secured from main entry		x	N/A	
	Squad Room		MSC, #B5-J		N/A	Adjacent to entry	Secured from main entry		x	N/A	
	Equipment Room	Uniforms, equipment	MSC, #B5-H		N/A	Adjacent to entry	Secured from main entry		x	N/A	
	Locked Files	Evidence, Criminal Justice, Information systems	MSC, #B5-F		N/A	Adjacent to entry	High security/ Limited access		x	N/A	Safe required
	Copy Room	Copy machine, supply storage	MSC, #B5-L		Central to Capitol Security	N/A	Secured through secondary entrance		x	Copy equipment	
	Staff Lounge	Eating area for staff with tables/ chairs/ mailroom	MSC, #BI-B		Central to Capitol Security	N/A	Secured through secondary entrance		x	N/A	
	Kitchen	Kitchen equipment, counter, and storage	MSC, #BI-C		Central to Capitol Security	N/A	Secured through secondary entrance		x	N/A	
	Computer Equipment	Computer equipment associated w/ Dispatch	MSC, #BI-G		Central to Capitol Security	N/A	Secured through IT office & Dispatch		x	Intensive requirements - security technology	

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Shared Space (cont.)	Women's Locker Room	Lockers, showers, toilets	MSC, #BI-N / #B1-L / #B1-M		Central to Capitol Security	N/A	Secured through secondary entrance		x	N/A	
	Elec./ Tel Room	Storage for telephone/ Data	MSC, #BI-P		Central to Capitol Security	N/A	Secured through secondary entrance		x		
	Men's Locker Room	Lockers, showers, toilets	MSC, #B1-Q/ #B1-R/ #B1-S/ #B1-T		Central to Capitol Security	N/A	Secured through secondary entrance		x	N/A	
	Mechanical Room	Storage for mechanical equipment	MSC, #BI-V		Central to Capitol Security	N/A	Secured through secondary entrance		x	N/A	
	Interrogation Room	Room to temporarily house and question suspects	MSC, #BI-U	Seat 4 people	Central to Capitol Security	Immediate access from secondary entry	Secured through secondary entrance		x	N/A	Handcuff rod mounted to back wall of room - requires constant supervision when in use

Key Needs:
- **Providing accessible toilets for both genders on every floor**
- **Replacing existing signage to meet ADA guidelines**
- **Designing a new accessible information desk**

Enabling legislation: Minnesota Statutes, chapter 256, section 256.482
Occupied square footage: None
Capitol staff count: No staff in Capitol Building

TENANT DESCRIPTION

The Council on Disability serves as an advocate to provide assistance and advice for people with disabilities, including those with physical, hearing, and visual impairments. The council has control of funds to make state facilities more accessible to those with disabilities.

Past projects that the council has been involved in at the Capitol include:

- Accessible parking spaces were added in parking 'Lot N'.
- Ground floor entrances at the port cochere and the north sides were made accessible.
- Some of the toilet facilities were made handicap accessible and unisex.
- Door hardware is currently being replaced to meet ADA accessibility guidelines.
- Accessible paths and seating were provided to the House and Senate chambers and galleries.
- Accessible paths and seating were provided to the café and the Rathskeller.
- Accessible seating was provided in the public hearing rooms.

Other accommodations at the Capitol include:

- TTY devices are provided at some public phones
- Assisted listening devices are available for hearing rooms and the legislative chambers
- Broadcast of Senate Media and House TV are closed captioned
- Sign language interpreters are available

Future improvements needed for accessibility to the Capitol include:

- The current toilet room configuration has men's and women's toilet rooms on alternating floors. One public unisex accessible toilet room is located on the second floor. At least one public accessible toilet for each gender should be provided on every floor. This could be accomplished by having both a men's and women's accessible toilet on that floor, or by having a unisex accessible toilet room on that floor. All floors should have one or the other.

- The current signage does not meet the ADA accessibility guidelines or the accessibility provisions of the Minnesota State Building Code.

- Although the House of Representatives and Senate staff provide reasonable accommodations for the disabled, information counters do not meet accessibility requirements. The House is currently changing their information counter to make it more accessible.

- The main information desk at the building south entrance is not handicap accessible.

- The assisted hearing system is currently a portable system. This system does not work as well as the installed systems which are now available. Also, the current system can be easily eavesdropped on.

- The tunnel connections from the State Office Building, Judicial Center, and Administrative building to the Capitol have ramps with steep inclines. If or when the tunnels are remodeled, slopes and landings should be reviewed. Any new tunnels should meet the ADA requirements for accessible paths.

Key Needs:

- **Increase workstation sizes to meet the Department of Administration workstation standards**
- **Additional meeting room(s).**

Enabling legislation: Article 5, MN Constitution
Occupied square footage: 11,301 sq. ft.
Capitol staff count: 40-45
Total staff count: 55+interns, 8-10 interns per semester

TENANT DESCRIPTION

The Governor's Office constitutes the Executive Branch of the Minnesota State government. The Governor's Office supports the Governor and acts as a representative for public citizens. Supervising staff includes the Lieutenant Governor, Chief of Staff, and General Council.

OFFICE SPACE

The offices are located on the first, ground, and basement floors. Staff counts have been consistent with the past administration. The Governor's Office is currently located in office spaces that are much smaller than the Department of Administration Workstation Standards. Although the group does not intend to grow, additional space is necessary to create a healthy and efficient working environment. The office can be divided into five divisions:

The Executive Division – The Executive Division is located in the first floor of the west wing. Current staff count is four positions including the Governor, Lieutenant Governor, Chief of Staff, and General Counsel. The division is responsible for administration of state government, biennial budgets, appointments, proposal and review of legislation, and the preparation of comprehensive long-range plans for state growth. Meetings in the division involve Commissioners (30-35 people) once a month, policy meetings (5-10 people), press conferences (5-100 people), interviews, and staff. Meeting space requires use of presentation tools and equipment. Press conferences require space for large media equipment. Visitors to this division include the general public, Commissioners, Legislators, federal and state officials, media, and other related staff.

The Operations Division – The Operations Division is located on the first floor and ground floor of the west wings, and the basement. Current staff count is 14 positions including two interns, a receptionist, and a webmaster. The division manages daily operational issues of the office. Each employee is seated next to the individual or department they are supporting. Staff related meetings take place once a month within the office area. Employees have close working relationships with the Department of Administration. The Operations division currently houses the department's computer server equipment. Proper ventilation is required for this equipment. The webmaster's office is located in the basement.

The Citizen Outreach Division – The Citizen Outreach Division is located on the ground floor of the west wing. Current staff count is 13 positions including two interns. This division manages constituent services, scheduling of the Governor and Lieutenant Governor, coordinates the Governor's Office intern program, and coordinates appointments to boards, judicial benches, and commissions. Meetings in the division involve staff (11 people) and visiting citizens on a daily basis, intern training (7-10 people) on a quarterly basis, agency contacts (3-10 people) and constituents (2-4 people) periodically. Agency and intern training meetings require use of presentation tools and equipment. Due to limited meeting space, many of the meetings are stand up. Visitors include the general public. Appointment coordinators meet with department contacts, board, and judicial appointees/ candidates.

The Policy Management Division – The Policy Management Division is located on the ground floor of the west wing. Current staff count is nine positions including two interns. The division works closely with the Governor and Lieutenant Governor on policy and legislative issues. Meetings in the division include: staff meetings (2-10 people) several times per day during session and two times per week in the interim, and meetings with Commissioners or Legislators (3-20 people) weekly during session. A small open group meeting space to seat five people is located in the hallway, outside private offices. Visitors include the general public, Commissioners and Legislators, Legislative Liaisons, and other State agency staff.

The Communications Division – The Communications Division is located on the ground floor of the west wing. Current staff is eight positions including one intern. The division manages communication and media needs for the office. Each staff workstation has a television and a computer. Meetings in the division include: staff meetings (7 people) on a daily basis and meetings with media contacts (1-4 people) weekly. This division also meets daily with the other divisions of the Governor's staff. Normally meetings take place within the division.

Other Shared Spaces

The Governor's Office – The Governor's Office is located in the first floor of the west wing. The entrance to the office is called the anteroom. A full time receptionist greets all visitors. Beyond the anteroom is the Reception Room, which is used for many press conferences and meetings. The Governor's Suite is on the west side of the Reception Room, with all other staff on the east side. The Minnesota Historical Society conducts hourly tours of the anteroom and Reception Room.

Conferencing and Meeting – Conferencing and Meeting spaces used by the Governor's Office include:

- Reception Room (capacity for 75 people to stand)
- Governor's conference room (seats 8-12 people)
- Lieutenant Governor's conference room (seats 6 people)
- Small informal meeting area on ground floor (seats 5 people)

Meeting space has been difficult to schedule when the legislature is in session. An additional conference room to seat 6-10 people is needed. This room should be centrally located to meet the needs of all divisions within the Governor's office. The majority of meetings require use of presentation tools and equipment.

Filing and Storage – Documents are stored in built-in wall files on the first level, and freestanding metal file cabinets along the hallway on the ground level. All files are archived per term. The Governor's Office also occupies office and storage space in the basement. One office suite has two workstations that are occupied by the Governor's Information Systems staff. Other office suites have several workstations that are reserved for the commissioners during session. Approximately 20 commissioners work at small desks within five private offices. There are two mechanical rooms accessed through the Governor's space. One room is used for storage of gifts.

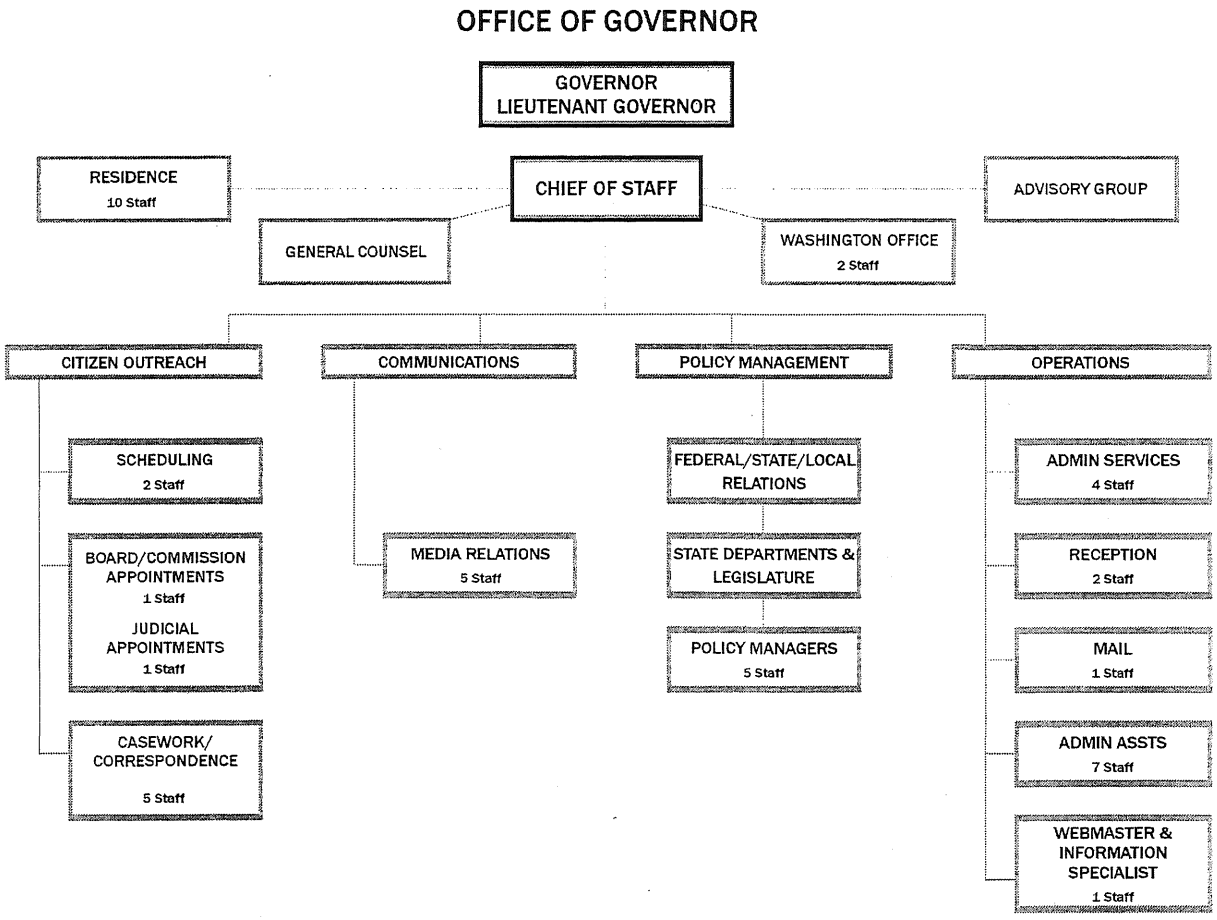
HISTORICAL SPACES

- Anteroom and Reception Room (public and ceremonial space)
- Governor's Private Office (private workspace)
- Governor's Conference Room ("public office")

OTHER CRITERIA

- **HVAC** – Both the first and ground floor staff reportd poor circulation of heating and cooling within workspaces.
- **Lighting** – Historical spaces require special lighting for historic artwork. Generally the entire office space on the first floor has high ceilings, which requires the use of desk lamps for adequate task lighting.
- **Security** – Significant security measures are taken for the Governor and staff. When the Governor is in the office, two bodyguards wait in the Anteroom. Doors to all staff offices are located behind secured doors operated by staff and the receptionist. All visitors must be escorted by staff beyond anteroom and reception room.
- **Recycling** – Typical recycling requirements for the offices include two standard containers for paper and one for pop cans/plastic. Many of these recycling containers are shared between divisions.

ORGANIZATIONAL CHART



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					Internal	Capitol		Yes	No		
Executive Office Space	Private office	Governor (1)	MSC, #131B	K (1)	Access to staff, Operations. Convenient access to Citizen Outreach & Communications.	Legislature, public presence required in the Capitol	High level of security & privacy, check in required	X		Power sources for media cabling & equipment, radio and TV.	
	Governor's conference room (Governor's public office.)	Conference room, meeting space.	MSC, #131	Seats 6 chairs at table with 10 stacking gallery chairs	Adjacent to Governor's office	N/A	High level of security & privacy, check in required	X		TV/ VCR/ PC/ projector/ & whiteboard. Power sources for media cabling & equipment and radio.	Used primarily for Governor. Shared with all divisions in the Governor's Office.
	Governor's toilet room	Toilet room	MSC, #131A	1 stall	Access to Governor's conference room	N/A	N/A	X		N/A	-
	Governor's Elevator	Private elevator for use by Governor only.	MSC, #130D	single cab	direct access to Governor's Suite	Separate from public circulation	High level of security required		X		-
	Private office	Chief of Staff (1)	MSC, #128C	K (1)	Access to Governor and other Governor's staff	Public presence required in the Capitol	High level of security & privacy, check in required to offices		X	N/A	-
	Private office	Lieutenant Governor (1)	MSC, #127A	J (1)	Access to Executive division	Public presence required in the Capitol	High level security & privacy, check in required to offices		X	N/A	-

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Executive Office Space (cont.)	Lieutenant Governor's conference room	Conference room, meeting space.	MSC, #127D	Seats 6-10 people	Adjacent to Lieutenant Governor's office	N/A	High level of security & privacy, check in required to offices		X	TV/ VCR/ PC/ projector/ whiteboard	Shared with all divisions in the Governor's Office.
	Private office	General Counsel (1)	MSC, #128B	I (1)	Access to Governor.	Public presence required in the Capitol	High level of security & privacy, check in required to offices		X	N/A	-
Executive Shared Space	Reception room	Highly active area: MHS conducts hourly tours, press conference space, cabinet meeting space	MSC, #F130C	Seats 35 people seated, 75 standing	Immediate access to Governor's office, Chief of Staff office, and Ante Room	Public presence required in the Capitol	High level of security & privacy, check in required	X		TV/ VCR/ PC/ projector, additional power sources for media cabling & equipment and radio.	Highly used.
	Filing Area	Group Filing	MSC, #128E (hallway)	(4) 18"d, 4 drawer file cabinets	Central to Executive division	N/A	High level of security & privacy, check in required		X	N/A	Recycling - shared with operations.
Executive Future Require -ments	*Conference Room*	*general meeting space*	*None*	*seat 6-10 people*	*Central to all divisions*	*N/A*	High level of security & privacy, check in required		*X*	*TV/ VCR/ PC/ projector/ whiteboard*	
Operations Office Space	Private office	Director (1)	MSC, #127B	J (1)	Immediate access to Executive division	Convenient access to Attorney General, Legislature	High level of security & privacy, check in required		X	N/A	-
	Open workstations	Admin/ Executive Assistants (7), Webmaster/Info. Specialist (1)	MSC, #128E	B (8)	Immediate access to Managers	N/A	High level of security & privacy, check in required		X	N/A	-

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Operations Office Space (cont.)	Open workstation	Personal Assistant for the Governor (1)	MSC, #131C	B (1)	Immediate access to Governor's office	N/A	High level of security & privacy, check in required		X	N/A	-
	Open workstation	Back-up Receptionist (1)	MSC, #128E	B (1)	Immediate access to anteroom	N/A	High level of security & privacy, check in required		X	N/A	-
	Open workstation	Interns (2)	MSC, #128E	A (2)	Adjacent to back-up receptionist (general work area)	N/A	High level of security & privacy, check in required		X	N/A	-
Operations Shared Spaces	Anteroom/ Open workstation	Primary reception area for Governor's office, location of full time receptionist (1).	MSC, #F130	A (2)	Access to Governor's office and division staff	Accessible to public/ Adjacent to entry	Check-in point for visitors	X		N/A	Anteroom functions as the reception area. Seating for 6-8 people.
	Mail Room/ Open workstation	Collection/ distribution, location of Mail coordinator position, and copy room	MSC, #130A	C (1)	Central to all divisions	N/A	High level of security & privacy, check in required		X	Copy equipment	Additional space required for paper intensive tasks.
	Filing Area	Built-in group filing, location of computer server cabinets.	MSC, #128E	(13-15) 18"d, 4 drawer legal paper size file cabinets	Central location to Operations division	N/A	High level of security & privacy, check in required		X	N/A	Files are archived at end of Governor's term.
	Coffee Area	Small table in hallway for misc. supplies, coffee, and snacks	MSC, #127C (hallway)	-	Central location to Operations division	N/A	High level of security & privacy, check in required		X	N/A	Recycling - 3 containers (2 paper, 1 cans/bottles)
	Storage	misc. equipment, supplies	MSC, #B36	-	No adjacency required	N/A	High level of security & privacy, check in required		X	N/A	-

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Operations Shared Spaces (cont.)	Open workstation	State Agencies work area during session months (Dec-May)	MSC, #B36 / #B46D	space for 20 people	No adjacency required	Space within Capitol complex is required close to legislature.	High level of security & privacy, check in required		X	N/A	Space not used June-Nov.
	Restroom	toilets	MSC, #128D	1 stall	Central to all divisions	N/A	High level of security & privacy, check in required		X	N/A	-
Citizen Outreach Office Space	Private office	Director (1)	MSC, #30B	J (1)	Immediate access to Communications & Policy Management, convenient access to staff	Accessible to the public	High level of security & privacy, check in required		X	N/A	-
	Private office	Scheduler (1)	MSC, #30A	B (1)	Immediate access to Communications & Policy Management, convenient access to staff	Accessible to the public	High level of security & privacy, check in required		X	N/A	-
	Private office	Scheduler (1)	MSC, #35	B (1)	Immediate access to Communications & Policy Management, convenient access to staff	Accessible to the public	High level of security & privacy, check in required		X	N/A	-

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Citizen Outreach Office Space (cont.)	Private office with open workstations	Citizen Liaisons (5), Appointment Coordinators (2), Administrative Assistant (1), Interns (2)	MSC, #29 / #30 / #34	B (12)	Immediate access to Communications & Policy Management, convenient access to other divisions	Accessible to the public	High level of security & privacy, check in required		X	N/A	Signature Machine (3'x 3'x 3')
Citizen Outreach Shared Space	Filing Area	Group Filing	MSC, #31A (hallway)	(12) 5 drawer file cabinets	Central to Citizen Outreach division	N/A	High level of security & privacy, check in required		X	N/A	-
	Coffee Area	Small table in hallway for misc. supplies, coffee, and snacks	MSC, #31A (hallway)	-	Central to Citizen Outreach division	N/A	High level of security & privacy, check in required		X	N/A	-
	Copy Area	Copy machine, supply storage	MSC, #31A (hallway)	-	Central to all divisions	N/A	High level of security & privacy, check in required		X	copy equipment	Recycling - 3 containers (2 paper, 1 cans/bottles)
Policy Management Office Space	Private office	Director (1), meeting room	MSC, #26	K (1)	Immediate access to Citizen Outreach, Communications & staff	All state agencies and Legislators	High level of security & privacy, check in required		X	TV at desk	Folding chairs sometimes brought in to accommodate meetings
	Private office with open workstations	Policy Managers (3)	MSC, #27C	G (3)	Immediate access to Citizen Outreach, Communications & staff	All state agencies and Legislators	High level of security & privacy, check in required		X	TV at desk	-

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Policy Management Office Space (cont.)	Private office with open workstations	Policy Managers (2)	MSC, #27B	G (2)	Immediate access to Citizen Outreach, Operations, Communications & staff	All state agencies and Legislators	High level of security & privacy, check in required		X	TV at desk	-
	Open workstation	Administrative assistant (1)	MSC, #27	B (1)	Adjacent to Director and Policy Mgmt. Managers	N/A	High level of security & privacy, check in required		X	N/A	-
	Open workstation	Intern (2)	MSC, #27	A (2)	Immediate access to Policy Mgmt. Managers	N/A	High level of security & privacy, check in required		X	N/A	-
Policy Management Shared Space	Reception Area	general meeting space in open area, not private or immediately available	MSC, #27	Seats 5 people, 12 standing	Central location to Policy Management division	N/A	High level of security & privacy, check in required		X	N/A	-
	Copy Area	copy machines/ supply storage	MSC, #27 (hallway)	-	Central location to all divisions	N/A	High level of security & privacy, check in required		X	Copy equipment	-
	Coffee Area	Misc. supplies, coffee, and snacks	MSC, #27	-		N/A	High level of security & privacy, check in required		X	N/A	-
	Filing Area	Group Filing	MSC, #27 (hallway)	(7) 18"d, 5 drawer vertical file cabinets	Central location	N/A	High level of security & privacy, check in required		X	N/A	-

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Communications Office Area	Private workstation	Director (1), meeting room	MSC, #32	J (1)	Immediate access Citizen Outreach & Policy Management, convenient access to all divisions	N/A	High level of security & privacy, check in required		X	TV at desk	-
	Open workstation	Communications (4), meeting room	MSC, #31	C (4)	Immediate access Citizen Outreach & Policy Management, convenient access to all divisions	N/A	High level of security & privacy, check in required		X	TV at desk	Weekly meetings with media contact
	Open workstation	Administrative Assistants (2)	MSC, #32	B (2)	Access to Director and Communicatio ns	N/A	High level of security & privacy, check in required		X	N/A	-
Communications Shared Space	Filing Area	Group Filing	MSC, #33 (hallway)	(4) 36"w 2 & 3 drawer file cabinets	Central to Communicatio ns division	N/A	N/A		X	N/A	Recycling - 3 containers (2 paper, 1 cans/bottles)
Information Systems Office Space	Open workstation	Computer Support Technicians (2)	MSC, #B44	C (2)	Convenient access to support divisions	N/A			X	N/A	-
Governor's Office Shared Space	Supply Storage	misc. equipment, supplies	MSC, #B44B	-	No adjacency required	N/A	locked		X	N/A	-
	Supply Storage	misc. equipment, supplies	MSC, #B57	-	No adjacency required	N/A	locked		X	N/A	-
	Gift Room	Storage for Governor's and Lt. Governor's gifts	MSC, #B46	-	No adjacency required	N/A	locked		X	N/A	-
	Exercise Room	Small space for donated treadmill	MSC, #B46B	-	No adjacency required	N/A	locked		X	N/A	-

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Governor's Office Shared Space (cont.)	Private Office with open workstations	Open workstations for Legislators during session	MSC, #B46C-E	-	No adjacency required	N/A	locked		X	N/A	-

Notes: (10) staff members work in the Governor's official residence, (2) staff members work in Washington DC

Key Needs:

- **Additional conference space for small meetings**
- **Additional temporary and permanent staff workspace surrounding the House of Representatives Chamber**

Enabling legislation: Minnesota Constitution, Article IV
Occupied square footage: 29,971 sq. ft.
Capitol staff count: 40 office staff + pages + interns
Capitol maximum staff count: 500 staff (floor session), including Representatives, staff, pages & interns

TENANT DESCRIPTION

The House of Representatives, along with the Minnesota Senate, constitute the legislative branch of the Minnesota State Government. The House of Representatives has 134 members who are divided between the majority political party (currently the Democrats), the minority political party (currently the Republicans), and sometimes third party or independent members.

The Minnesota House of Representatives (House) staff are located in both the State Office Building and the Capitol Building. All of the representative's offices, most of the staff offices and most of the House hearing rooms are located in the State Office Building. The House of Representatives Chamber, the Chief Clerk's office, the House TV offices, some hearing and meeting rooms and storage are located in the Capitol. Approximately 40 House staff work full time in the Capitol Building. The House spaces in the Capitol are divided into the following categories of use:

OFFICE SPACE

The Chief Clerk's Office - Most of the Chief Clerk's staff offices are located on the second and third floors, surrounding the perimeter of the House of Representatives chamber. During session, some of the Chief Clerk's staff on the second floor will be temporarily relocated to seats in the chamber. The empty workstations are used by temporary House staff from the State Office Building, who need close proximity during legislative session. This staff includes employees from the Revisor's office, pages, and support staff. These staff provide their own equipment, creating overcrowded working conditions. Other visiting staff and representatives often occupy the Chief Clerk's private offices for small meetings during session

The Chief Clerk's office is responsible for providing assistance and advice to the Speaker and members of the House in meeting the legal and parliamentary requirements of the lawmaking process and to record the history of that process in a clear, unbiased and accurate manor. This office is also responsible for providing and disseminating information to the members, staff and general public relevant to the legislative process. This includes bills, journals, daily agendas and calendars.

The Chief Clerk's office can be broken into six divisions:

- **The House Desk** – Current staff count is six positions including the Chief Clerk and the 1st and 2nd assistants. The Chief Clerk works under the direction from the Speaker of the House. All of the other divisions within the Chief Clerk's office report to the Chief Clerk. The front desk is responsible for managing administrative and parliamentary activities for the House of Representatives. The journal editor plans, directs, and supervises House of Representatives Journal publication. These staff work at the front desk of the chamber during floor sessions. Other staff use their offices during the floor sessions.

- **The 3rd Floor Administrative Staff** – Current staff count is eight positions. The division helps to produce the House of Representatives Journal and other documents, including the printing and distribution of all bills.

- **The Front Office** – Current staff count is five positions, however, an increase to seven is expected in the future. This division manages and provides information for the House of Representatives members and the general public. Most of the bills and other information are on the internet, but there is still a high demand for paper copies. Legislative documents for public distribution are kept in pamphlet bins and large rotating files near the front desk.

- **The Index Department** - Current staff count is seven positions. This division compiles and writes information on bill status and bill summaries that are distributed to the members and the public. Although adjacencies with the Chief Clerk's office are desired, it is possible for the Index division to be relocated to another space within the Capitol Building.

- **Information Services and Communications**– Current Information Services staff count is three positions. This division provides development and technology support, training, website, and technical management for the House staff in the Capitol Building.

  Current Communications staff count is 1 position. This division is responsible for the maintenance and repair of electrical and electronic systems. Both Information Services and the Communications Officer work closely with House Television.

It is critical for these divisions to be located in the Capitol, since they all work together to produce legislative materials during the session. Working relationships with other tenants in the Capitol Building include the Secretary of the Senate, Plant Management, the Minnesota Historical Society, and Capitol Security. The Chief Clerk's office must be located in the same building as the Secretary of the Senate, since official information is shared as part of the bicameral legislative system. Some information is shared electronically but official documents must be in hard copy. Immediate adjacencies are not required with other building tenants. Visitors to the office include legislators and the general public. Visitor traffic is especially heavy during session. Most visitors frequent the Information Office and House Index area. Current information desk layouts do not meet ADA guidelines.

- **House Television** – Offices are located on the second and third floors of the east wing. Current staff count is seven positions, however an increase to 10 is expected in the future. This division is responsible for providing cable broadcast of House hearings and sessions. Although the House Television works closely with Senate Media, adjacencies are not required. Workspaces are currently minimal and multiple workstations are often located in an office. The division requires separate space for a break room, meeting room for 6-9 people, studio with light controls, and staging area for equipment repair. Currently, House Television plans to convert room 317 B into a studio.

- **The Speaker of the House of Representatives** – The Speaker of the House of Representatives has office space in the State Office Building as well as a small office (room 218) in the Capitol Building. The House Chaplain and Representatives often use this room for small group meetings of about 6 to 10 people.

- **The House Sergeant at Arms** – There is no permanent office space assigned to the Sergeant in the Capitol building. The Sergeant's offices and support spaces are primarily located in the State Office Building, because this is where most of the House functions are. During session, the Sergeant at Arms uses room 216D in the Capitol Building for brief meetings with staff and as a page gathering area. Current Sergeant at Arms staff count is nine permanent employees and 45 temporary employees. This division is responsible for security of the House Chamber during floor sessions and manages the House hearing rooms in the Capitol Building and the State Office Building. The Sergeant's office also manages parking and provides security for all House members and staff. Other services include mail distribution and organization of seminars and educational programs about the legislative process. The Sergeant also is responsible for guarding the front desk of the House Chamber, delivering messages to the representatives, and dealing with public issues. Most House committees are at a scheduled time and meeting room in the State Office Building.

There is a need for more parking close to the State Office Building and Capitol Building for House staff. Because of the late work hours and shortage of close parking, the staff must walk long distances to their cars. Refer to *'Public Needs Summaries – Parking'* in Appendix B. Additional signage is also needed to more clearly identify the available parking. Refer to *'Public Needs Summary Signage'* in Appendix B.

MEETING AND HEARING ROOMS

Meeting and hearing rooms are located in the State Office Building and Capitol Building:

- **State Office Building** - The hearing rooms in the State Office Building where recently upgraded with new lighting, finishes and new multimedia presentation technology. Additional security is needed for rooms that have the expensive multimedia presentation equipment. The largest House of Representatives hearing room, which is in the State Office Building, can accommodate a committee of 32 and a public audience of 185.

- **Capitol Building** -The House of Representatives hearing and meeting rooms in the Capitol are used primarily during legislative session. Rooms 217 and 316 are used as caucus meeting rooms. These rooms must be located near the House chamber, but do not need the presentation technology that is required for hearing rooms. Room 118 is a public hearing room and is currently used more often by the Senate than by the House of Representatives.

Additional meeting and hearing rooms are needed. Because of the increased involvement of the public in the legislative process, hearing rooms are needed that will accommodate a larger public audience. There is also a need for additional small, private meeting rooms near the chamber.

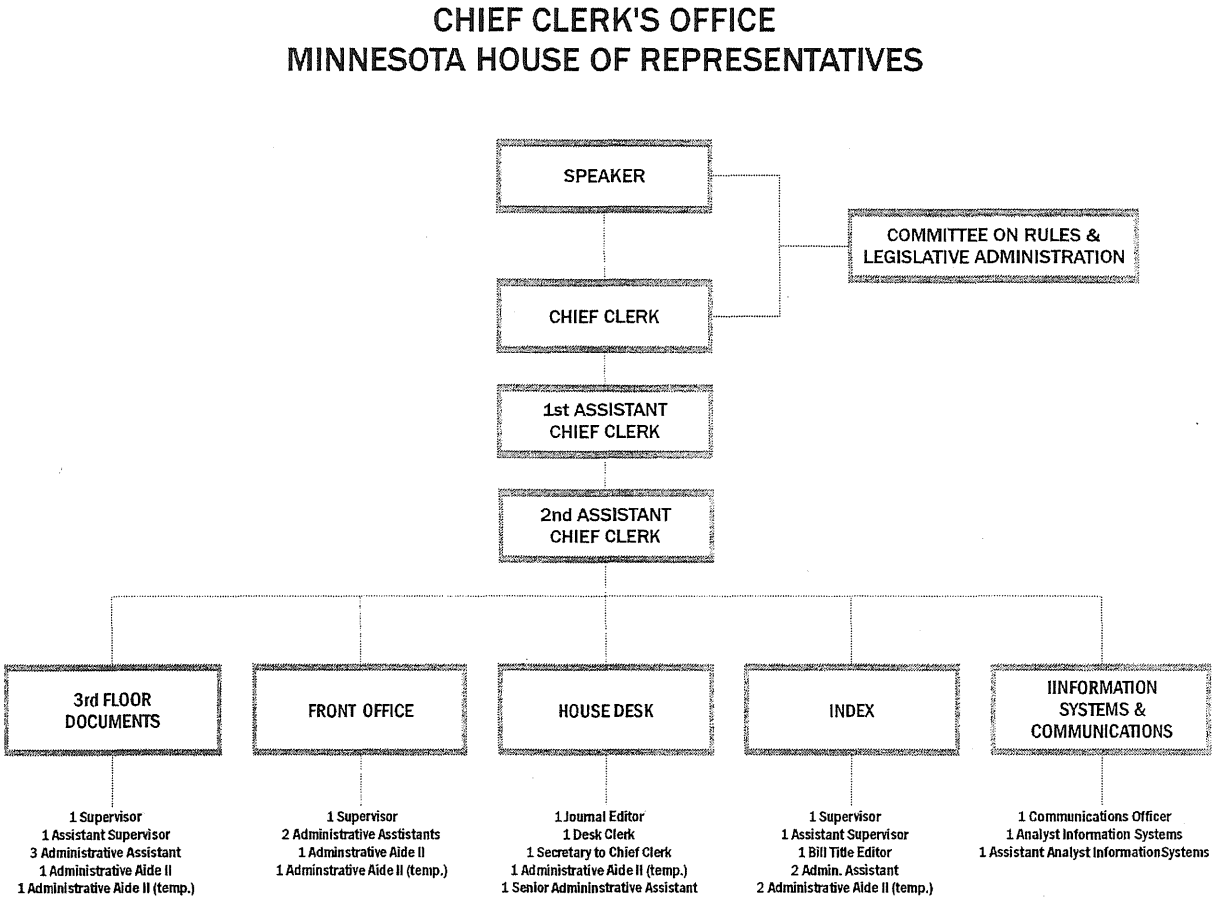
HISTORICAL SPACES

- House of Representatives Chamber, Galleries (public, ceremonial)
- House of Representatives Retiring Room (ceremonial)
- East and West Chamber Corridors (private workspace, circulation)

OTHER CRITERIA

- **HVAC** – Air ventilation has been reported to be cool within the office area. The House of Representatives Chamber is reported to be warm in the spring. Ventilation in the Docutech copy area is not balanced for the heat generated from the operating copier and printing equipment. A separate air conditioning unit has been located in this room to balance the heat load. The House TV occupies space with heat generating equipment and also requires a separate humidity control unit.
- **Lighting** – Historical spaces have high ceilings and require special lighting for historic artwork. Generally, office spaces have high ceilings and require the use of desk lamps for adequate task lighting.
- **Security** – All storage spaces are secured.
- **Recycling** – The Minnesota State Government Resource Recovery Office provides all recycling bins. Bins for white and mixed paper, cans, plastic and glass bottles are placed throughout the division areas for shared use. Bin sizes range from 14"w x 14"d x 36"h to 10"w x 12"d x 36"h.
- **Storage** – All House divisions currently use the House of Representatives storage area in the basement of the Capitol building. Storage items include records, books, furniture, equipment, and bottled water. Storage areas are maintained by the Chief Clerk's office.

ORGANIZATIONAL CHART



Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Chief Clerk's Office	Private office	Chief Clerk (1), meetings	MSC, #214C	J(1)	House Desk office staff	House Chamber, Sec. of Senate , Revisor's office	hours vary with session		X	–	Conference table to seat (5) people- often used by members during session.
1st Assistant	Private office	1st Assistant (1), meetings	MSC, #214E	H(1)	House Desk office staff	House Chamber, Sec. of Senate , Revisor's office	hours vary with session		X	–	–
2nd Assistant	Workstation	2nd Assistant (1), Revisor staff	MSC, #214A	G (1)	HouseDesk office staff Third floor Desk Sec'y Sup.	House Chamber, Sec. of Senate , Revisor's office	hours vary with session	X		Revisor's system	–
House Desk Office Space	Workstation	Journal Editor (1), Desk Clerk (1), Revisor staff	MSC, #214A / #211	G (2)	House Desk office staff Third floor Desk Sec'y Sup.	House Chamber, Sec. of Senate , Revisor's office	hours vary with session	X		Open workstation w/ Revisor's system	One unassigned workstation in 214A
	Open workstation	Administrative Assistant (1)	MSC, #214A	B(1)	House Desk office staff	House Chamber, Sec. of Senate , Revisor's office	hours vary with session	X		–	–
House Desk Shared Space	Copy Area		214D (hallway)	N/A	House Desk office staff	–	–		X	copy equipment	–
Third Floor Office Space	Open workstation	Desk Secretary Support (1)	MSC, #348	D(1)	Third Floor, Journal Editor, 2nd Assistant, Front Office staff	House Chamber	hours vary with session		X	pneumatic tube to House Chamber	Availability to daily sessions is critical.
	Open workstation	Assistant Supervisor (1), Senior Administrative Assistant (1), Administrative Assistant (5)	MSC, #348	B(7)	Third Floor		hours vary with session		X	pneumatic tube to House Chamber	–

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Third Floor Shared Space	Copy Area	Mass (Docutech) copier	MSC, #356	N/A	Third Floor House Chamber	–	–		X	copy equipment	–
	Supplemental copy area	Storage for copy paper, layout and collating space, temporary workspace, recycling	MSC, #356	N/A	Third Floor, central to all divisions	–	–		X	copy equipment	–
	Kitchenette	Break area, kitchen appliance	MSC, #357	N/A	Central to all divisions	–	–		X	kitchen appliances	–
	Storage	Electrical, wiring and miscellaneous storage	MSC, #350A-D		–	–	–			–	–
	Electrical Rooms	House electrical infra-structure	MSC, #310A/ 313A	N/A	Communication s Officer	House Chamber	–		X	–	–
Front Office Space	*Private office*	Front Office Supervisor	MSC, #212	B(1), *G(1)*	Front Desk office area	House Chamber, Accessible to Public	hours vary with session	X		–	–
	Open workstation	Assistant Supervisor (1), Administrative Assistant (2), Administrative Aide (1)	MSC, #212/211A	A(4)	Front Desk office area	House Chamber, Accessible to Public	hours vary with session	X		–	–
Front Office Shared Space	Copy Area	Copier workroom, with work counter and overhead storage	MSC, #211	seats 4 task chairs at counter	Front office staff	–	–		X	copy equipment	–
	House Reception	Service counter for members and general public	MSC, #211	N/A	Front office staff	House Chamber Accessible to Public	–		X	copy equipment	Current informational paperwork is also located on the front desk and in pamphlet bins behind the front desk. Bills are archived with MHS after 20 years. Desk does not currently does not meet ADA guidelines

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Front Office Shared Space (cont.)	Filing	Power files (3)	MSC, #211A	power files against walls (350 feet of filing)	Front office staff	–	–		X	Electronic file Index	Legislative documents for public distribution are stored in large rotating files.
	Storage		MSC, #211B	N/A	–	–	–		X	–	–
Index Dept. Office Space	Open workstation	Index Office Supervisor (1)	MSC, #210	B(1), *C(1)*	Index division staff	–	hours vary with session		X	–	–
	Open workstation	Assistant Supervisor (1), Administrative Assistant (3)	MSC, #210 / #345	B(4)	Index division staff	Accessible to Public	hours vary with session		X	–	–
	Open workstation	Bill Title Editor (1)	MSC, #345	A(1)	Index division staff	Accessible to Public	hours vary with session		X	–	–
Index Dept. Shared Space	Open workstation	Reception desk		N.A.	Index division staff	Accessible to Public	hours vary with session			–	Desk does not currently does not meet ADA guidelines
		Copy area, space for coffee pots, microwave, and recycling	MSC, #210	N/A	Central to Index division staff	–	–		X	kitchen appliances	–
Info. Services Office Space	*Private office*	Webmaster (1)	MSC, #215A	B(1), *F(1)*	Information Services, Communications	Chief Clerk's Office	hours vary with session		X	–	–
	Open workstation	Information Systems Analyst (1), Systems Analyst (1)	MSC, #216A	B(1), *C(2)*	Information Services, Communications	Chief Clerk's Office	hours vary with session		X	–	–
Communications Office Space	Private office	House Communications Officer (1)	MSC, #B69	G(1)	Information Services	House Chamber, House Television	hours vary with session		X	–	Space also serves as a storage area
Shared Space	Conference Room	Conference / meeting room, full kitchenette behind doors. File storage.	MSC, #404	seats 8-12 people	–	House Chamber	–		X	–	Used for training sessions. Not handicapped accessible.

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Shared Space (Cont.)	Conference Room	Conference / meeting room, informal retiring room, full kitchenette	MSC, #408	seats 8-12 people	–	House Chamber	–		X	–	Not handicapped accessible.
	Copy Area	Copy machine, supplies	MSC, #214 / #211		Front Desk staff	House Chamber	–		X	copy equipment	
	Copy Area	Docutech (mass copier)	MSC, #348	N/A	–	House Chamber	–		X	copy equipment, separate A/C unit	Paper Storage next door, shared with members during session, break area adjacent
	Shared space	Used for food prep, for misc. events	MSC, 346 (landing)	N/A	–	–	–		X	–	–
	Storage	Archive Storage-old records, books, furniture, equipment & bottled water	MSC, #B63, B67, B69	300' of lineal shelving	–	–	–		X	–	–
	Storage		MSC, #350A-C								
	House Supply & Duplicating	Collating, distribution, and filing of bills	SOB, #35	N/A	–	–	–		X	–	–
	Restroom	Women's	MSC, #211D	2 stalls	Central to all House staff	–	–		X	–	–
	Restroom	Men's	MSC, #2211F	3 stalls, 5 urinals	Central to all House staff	–	–		X	–	–

Items in standard font are current information

Items in italics are future needs

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Office Space	Open workstation	Director (1)	MSC, #216C	D(1)	All House Television staff	Chief Clerk Information Services and Office, accessible to general public	hours vary with session		X	–	Shared with ITV Coordinator, break and meeting space
	Open workstation	Interactive TV Coordinator /Assistant Producer(1), meeting room/ workroom/ break room	MSC, #216C	C(1)	Director	Chief Clerk Information Services and Office, accessible to general public	hours vary with session		X	–	Shared with Director, break and meeting space
	House TV Control Room- Open workstation	Production Director (1), Production Assistant 2 *(+2 future)*, videotape storage	MSC, #317B	B(1), A(1)	Engineering and Closed Captioning staff	Chief Clerk Information Services and Office	Controlled access		X	seperate humidity control unit & broadcasting equipment	*Low level lighting is required for Control Room. Anticipated 'studio' environment would require adjustable light levels and additional A/C requirements.*
	Open workstation	Engineering Director (2)	MSC, #317C	B(2)	Production Director	Chief Clerk Information Services and Office	Controlled access		X		*Workbench is desired for unpacked product in process of being used and product in need of repair*
	Open workstation	*Production Coordinator*	*N/A*	*B(1)*	*Production Director*	*Chief Clerk Information Services and Office*	*Controlled access*		*x*		
Shared Space	Open workstation	Closed Caption station (1), small workstation (1). *Would like to turn into TV Studio*	MSC, #317E	D(1), A(1)	Control Room & Engineering	Chief Clerk Information Services and Office	Controlled access		X		Shared with Chief Clerk's Office Information Services (training/ computer deliveries), House Research, and House Fiscal end of session (approx. 2 temporary staff for 2-4 weeks)

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
	Meeting/ Break Area	General break area for supplies, coffee, mail, and shared equipment and conference space	MSC, #216C	table to seat 4 people	Central to House Television	–	*Privacy required*		X	Internet connectivity for (2) during meetings, kitchenette equipment	Larger table is desired to sit 6-9 people. Located adjacent to high traffic tenant hallway. Difficult to conduct meetings. Workroom and break room functions are shared with the Chief Clerk's Office Information Services.
	Copy Area	Copier	MSC, #317 (hallway)	N/A	Central to House Television	–	–		X	copy equipment	Shared with Chief Clerk's Office Information Services and the House Majority Caucus.

Items in standard font are current information
Items in italics are future needs

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Office Space		Pages	SOB, #	1 desk for captain					x		
Shared Space	Work Area	Meetings, Temporarty Ofice Space	MSC #216D	14' x 16'		House Chamber, House Heraring and meeting rooms			x		

Items in standard font are current information

Items in italics are future needs

Key Needs:
- **Redesign information desk to meet ADA accessibility guidelines**
- **Visitor Center to accommodate visitors**
- **Updated and expanded office space.**

Enabling legislation: Minnesota Statutes and Minnesota Constitution Article 1, Section 3 16B.24
Tenant square footage: 2,330 sq. ft. + information desk
Capitol staff count: 6 office staff + 21 guides

TENANT DESCRIPTION

The Minnesota Historical Society's (MHS) primary role at the Capitol is to protect the historical integrity of the Capitol Building. The MHS staff conducts educational tours of the building every hour and staffs the information desk. MHS is responsible for all of the artwork, historic furniture and building artifacts of the Capitol building. MHS also reviews and approves all projects in the ceremonial and public spaces of the building.

Current staff count is six office staff and 21 guides, within the next ten years, they anticipate a growth to 11 full time positions, 36 part time positions and 15 volunteers. The staff offices are currently located in room #B59 of the Capitol Building basement. The drawbacks of this office space include:

- Immediate adjacency to the central corridor, garbage room, and loading dock elevator (noisy disruptions)
- Low ceilings (undesirable workspace)
- Poor air circulation
- Lack of acoustic privacy (inability to conduct confidential conversations)
- Too far from information desk.

The main entry area and visitor services are not adequate to effectively serve the 130,000 to 160,000 people who visit the Capitol Building each year. Tours are conducted seven days a week, except holidays. The 45-minute building tour begins at the information desk and proceeds through the first, second and third floors. If weather permits, the tour also goes up to the Quadriga. At peak times, as many as six separate tours with about 35 people each, are being conducted every hour. Often, the legislators will meet with the tour groups from their individual districts. The House and Senate photographers photograph the legislators with the groups. Special MHS events are held at the Capitol 8 to 12 times a year.

OFFICE SPACE

The Entry – The entry serves many divers functions as a meeting room, library, lunch/break room, and locker area for guides. Many of these functions should be separated. A private meeting space is needed for six to ten people. The break area, lockers and study area would function more efficiently if they were located closer to the guide staff, who currently wait at the Information Desk prior to beginning tours. The site manager, assistant manager, and site

technicians make frequent trips from the office space to the information desk to coordinate tours.

Employee Workspace – Employee workspace contains workstations that are comprised of furniture pieces dating from 1905 to 1960. These workstations are separated by low partitions, which provide no acoustic privacy. The management staff and the tour scheduler need private offices with some acoustical privacy. There is no additional room for staff growth.

General Storage – MHS has recently gained a storage room to the rear of the office. This room will be used to store program materials, exhibit cases, brochures, and flat files. A small storage space adjacent to the office is currently used to store postcards, brochures and other office materials.

Special Storage - The MHS also has a storage area adjacent to the Capitol Building's trash room, which houses artifacts and some historic furniture. The temperature and humidity of this space is recorded. Additional storage is needed for historic furniture.

VISITOR SPACES

The Visitor Information Desk – The Visitor information desk is located on the first floor near the south entrance. The MHS staffs the information desk during the day and Capitol Security staffs the desk at night. The desk provides a check-in point for the building tours. MHS staff answer questions about the historic aspects of the building and direct visitors to specific locations of offices and hearings rooms. The current desk is not handicap accessible, is in poor condition and is not ergonomically designed for staff use. MHS staff are also responsible for reporting any suspicious behavior to Capitol Security. A panic button is located at the desk for emergencies.

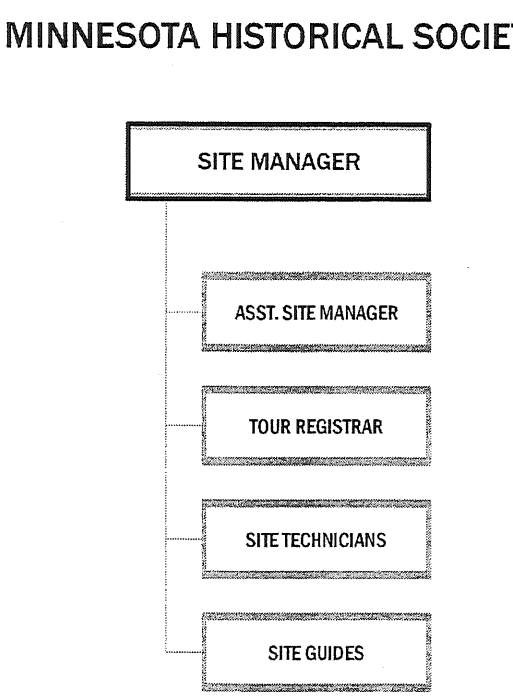
An expanded visitor's center is needed to meet these demands. The center should include:

- An accessible and ergonomically designed information desk with clear sightlines
- Exhibit space (cases will require special humidity, temperature, and lighting controls)
- Gift shop/ retail (secured)
- Educational/ orientation classroom
- Visitor services (public telephone/ restrooms, change machine, ATM, and coat check).
- Open event gathering space to organize tours and visits from legislators

OTHER CRITERIA

- **HVAC** – The offices are cold and humid in the winter and hot in the summer.
- **Security** – All storage spaces are secured.
- **Recycling** – Recycling requirements for the office includes two standard bins, one for cans and one for paper.

ORGANIZATIONAL CHART



Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Information Desk/ *Visitor Center*	Information / Front Desk	Brochure display, tour check-in, information (35,000 questions annually), security, retail	MSC, Lobby	expand to visitor center	MSC south entrance, easily visible to visitors, near multiple sets of doors	near visitor parking, bus drop off and bus parking	first contact with public, security button under desk, primary location for monitoring entry traffic		X	*computer on MHS network*, cash register	Should be moved out of public corridor, needs to meet ADA guidelines for staff and guest access,and current counter does not fit with the historic character of the building. and is 30 years old. Ergonomics behind desk need to be addressed.
	Flags	*Display*	*Rotunda*	-	Could be incorporated with other exhibit space	Path of tours	Priceless exhibit	X		*N/A*	*Needs humidity and temp control*
	Exhibit	*space for rotated exhibits and other Capitol building & government related displays and exhibits.*	*Future*	-	*near MHS office*	*path of tours, possible hallway*	*open to public, secured space when closed*	X	*X*	*Visual presentation capabilities. Amplifiers for guide microphones*	*Temp. humidity and lighting control*
Information Desk/ *Visitor Center*	*Gift Shop / retail*	*Area to display and sell post cards, books and small Minnesota State Capitol gifts*	top of Info. Desk	13 sf currently - *need - s.f.*	*near MHS offices, near information desk*	Path of tour	*open to public, secured space when closed*		*X*	*cash register, computer on MHS network*	-
	Retail storage	*storage for merchandise*	*MSC, #B59C*	-	*adjacent to gift shop/ retail space*	-	*secured space*		*X*	-	-

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
	Orientation space	*Indoor tour waiting area, short term meetings...*	*near Info. desk, in rotunda, south exterior steps, corridors*	*tour group - 35 + (up to 6 groups per hour)*	*Near south entrance, easily visible to visitors, tour check-in*	*adjacent to multiple entry doors*	-		*X*	-	-
Information Desk/ *Visitor Center (cont.)*	*Visitor Services*	*Public restrooms, change machine, ATM, coat check (lockers?), and public telephones*	*Future*	-	*need to be visible to public and near tour check in*	*Central to entry*	*open to public*		*X*	-	-
	Classroom	*space for legislators to meet with groups, interpretation programs*	*Future*	*to seat tour groups- 35+*	*near MHS offices and tour check-in*	*Central to Capitol, near tour check-in*	*accessible to tours, secured space when closed*		*X*	-	-
	Classroom storage	*storage for chairs, tables, and a/v equipment*	*Future*	-	*adjacent to classroom*	-	*accessible to public, secured space when closed*		*X*	TV/ VCR/ PC/ projector	-
MHS Office Space	library / study room	Library of books on State Capitol for staff	MSC, #B59	412" of books	*near information and check-in desk, and staff offices;* near offices, too far from front desk	-	private access		X	computer for guides, on MHS network	requires pin up space
	breakroom	*room for guide staff to use between tours, pre-shift meetings (2x daily)*	*none*	*for 30 guides*	*near changing rooms*	*near beginning of tour*	*private access*		X		
	changing rooms	*changing rooms w/ lockers for uniforms*	Lockers in MSC, #B59	*for 30 guides,*	*Near front desk and origin of tours, near breakroom*	-	*private access*		X	-	-

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
	open offices (4)	Site manager (1), Assist. Site manager (1), tour registrar (1), site technicians (1)	MSC, #B59	C (4)	next to internal storage	next to garbage room	private access		X	-	currently open offices, need to be private, see future requirements for open and private offices listed below
	private offices (4)	*Site manager (1), Assist. Site manager (1), tour registrar (2)*	*Future*	*H (1), G (3)*	*near library and information desk*	-	*private access*		X	*comp. on MHS network*	
MHS Office Space (cont.)	*open offices (3)*	*site technicians (3)*	*Future*	*B (3)*	*near private offices, library and information desk*	-	*private access*		X	*comp. on MHS network*	*site technicians are part time staff, staff will be equal to 3 full time*
	Conference room	*all staff meetings (25 people, 6x /year), other meetings (2-10 people, 2x per month)*	*Future*	*6-10 people*	*internal to office space, private*	-	*private access*		X	*video, power point, telephone conf.*	-
	work space	space for copier, recycle bins, mail boxes, office supply storage, etc.	MSC, #B59	-	adjacent to private and open offices	-	private access		X	-	Recycling- spread out through workspace
	office storage	program materials, brochures	MSC, #B55	-	adjacent to offices	-	-	-	-	-	-
	file space	Flat files (2 stacked), vertical files (5)	MSC, #B59	231" of cabinets	adjacent to offices	-	private access		X	-	-
MHS Storage	collections storage	architectural fragments from Capitol and some furnishings.	MSC, #B60	1000 sf	none	*not required*	private access	-	X	-	-
	records storage	for building records and archived files	MSC, #B59	-	adjacent to offices	-	private access	-	X	-	
	Furniture Storage	*For 1905 furniture which is not in use,*	*Offsite*	*approx. 4,000 sf*	-	*not required*	*limited access*	-	X	*controls for temperature & humidity*	needs special temperature and humidity control

Preliminary Square Footage Estimate

Office Space 3,000 sf

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
	Public Space/ Visitor Center		11,700 sf								
	Storage		5,000 sf								

* *Items in italics are future needs,* those in standard font are current information

Key Needs:
None

Enabling legislation: Minnesota Statues 16B
Occupied square footage: 7,117 sq. ft. (office and storage)
Capitol staff count: 3 office staff

TENANT DESCRIPTION

The Plant Management Division (PMD) maintains 21 facilities (including the Capitol Building) as well as the surrounding grounds and parking areas under the custodial control of the Department of Administration. PMD also promotes energy conservation opportunities on a statewide basis and administers the state resource recovery (recycling) program. Most renovations within the Capitol Building include coordination with Plant Management for building support systems. PMD is also responsible for scheduling and preparing for events in public and ceremonial spaces in the Capitol Building. Preparation includes temporary set up and removal of lecture/demonstration furnishings, stages, and equipment. PMD is organized into four areas: Complex Operations, Complex Services, Technical Services, and Support Operations.

Complex Operations – Complex Operation maintains and operates buildings under the custodial control of Plant Management through housekeeping, engineering services, building management and project coordination services.

Complex Services – Complex Services provides grounds maintenance and snow removal services in the Capitol Complex; operates the State Recycling Center; provides resource recovery assistance and education, and approves and coordinates special events occurring in areas under the division's custodial control. Also provides material transfer services including vehicle repair, refuse removal, moving and delivery services.

Technical Services – Technical Services provides traditional trade and repair services as part of the lease of space by Department of Administration to other agencies. Minor repairs, remodeling, or other jobs outside the scope of the lease agreement, are performed by Plant Management on a fee-for-service basis. Also provided is the operation of the environmental, fire, life and safety systems in the buildings under the division's custodial control. This area also focuses on statewide energy efficiency improvements, monitors the use of energy in all state-owned facilities and completes energy retrofit projects through Energy Management Services.

Support Operations – Support Operations schedules and dispatches services in response to tenant/building issues or problems; schedules common space conference rooms and special events; manages contract and daily permit parking in the Capitol complex; manages the bus card program; and provides administrative, technological, and financial support to all other areas of the division.

OFFICE SPACE

Employees are located in several different buildings across the complex. The majority of space assigned to PMD is located in the basement. Capitol staff count includes three positions. State Capitol staff includes one engineer located in B37and two maintenance offices located in B68 and B70. Staff lounge, locker, and storage supply rooms are located in B70 a-e. Other spaces include storage for event chairs and tables, a carpentry/workroom for visiting trades and mechanical, electrical, and phone system rooms.

HISTORIC SPACES

- Judge's Dining (currently used for storage)

PMD schedules the following spaces in the Capitol Building for public and ceremonial events:

- Rotunda
- Great Hall (ground floor west wing corridor)
- Ground floor north corridor
- First floor north corridor

OTHER CRITERIA

- **HVAC** – PMD maintains systems for the Capitol Building. Some of the existing fan coil units must have front panels removed in order to replace filters.
- **Security** – PMD works in conjunction with Capitol Security to ensure implementation of security procedures.
- **Recycling** - The Materials Management division organizes the 'Resource Recovery' program for all tenants in the capitol building by providing delivery and pick-up of bins for recycled paper, glass, and aluminum.

Key Needs:
- **Co-locate Press groups**
- **Inadequate lease space (air quality and mold issues)**
- **Permanent location for parking satellite trucks**

Enabling legislation: MN Statutes 16B.24 & Article 1, Section 3 of the MN Constitution
Outstate Press occupied square footage: 540 sq. ft.
Metro Press occupied square footage: 3,447 sq.ft.
Capitol staff count: varies during session and with each company

TENANT DESCRIPTION

Several news organizations were interviewed during the predesign process including TPT, Kare 11, WCCO TV, the Post-Bulletin of Rochester and Austin, and the Associated Press. The tenant information is based on these interviews as well as information provided by the Real Estate Management Division.

The Press Corps is a unique group of tenants located in the Capitol Building basement. They are the only tenant group in the building that is not a government agency. The Press Corps is comprised of competing organizations covering state government news. News organizations located in the Capitol Building cover state government news through broadcast (radio and television) and print media (newspaper and online). The broadcast media receive extra equipment for viewing, editing and recording. There are currently insufficient electrical outlets for this equipment. The news organizations can also be divided into:

Metro Press – The Metro Press serves the twin cities metro area. Most of the metro media leases space in the Capitol all year. The leased space is referred to as 'the main Press area'.

Out-state Press – The out-state press covers areas outside of the twin cities metro area. The majority of out-state media leases space only during the legislative session.

OFFICE SPACE

Each media organization holds a separate lease with the Real Estate Management Division. Available space in the basement is limited, so the Press Corps are located in three separate areas. This puts some of the media at a disadvantage. Different organizations and government agencies visit the main Press area to announce news releases and briefs. If these groups are not familiar with the basement spaces of the Capitol, they unintentionally exclude information to some of the news organizations. In order to provide equal access to all of the Press, they should all be located in the same area.

Each news organization is responsible to provide their own furniture, equipment, cable connections (to Senate Media Services/ House TV) and cable connections to their home offices or satellite dishes. At least two news organizations currently have satellite dishes on the Administration Building ramp. Although they are competitive organizations, the media also share general office equipment including fax machines, coffee makers, refrigerators, microwaves and a copy machine.

Senate Media Services and House TV provide the media corps with video feeds to access cable televised committee hearings and floor sessions. The access makes it possible for the Press to follow these proceedings without being present in the meeting room. Often, the media will wait to attend a proceeding until it is nearly complete. At that time, the media organization will try to obtain an interview with members of the legislature or the legislative staff. The media organizations find it beneficial to maintain their presence in the Capitol building because of the proximity to public proceedings.

Media staff positions include full time, part-time and temporary (only during the legislative session). Private offices, some shared offices and some open workstations should be provided with flexible layout to accommodate different needs. Privacy issues for competing media must also be considered.

SHARED PRESS CONFERENCE ROOM

Several tenants in the Capitol Building have expressed a need for a shared Press Conference Room in the Capitol Building. The Press conference room needs to have:

- high ceilings for studio lighting
- no windows that would infiltrate natural light
- TV and acoustics considerations
- accommodation for 40 to 60 people standing plus equipment
- accommodation for small group or one-on-one interviews
- close proximity to Press Corps offices

Press conferences are currently held in the following locations:

- Governor's Reception Room
- Attorney General's Conference Room
- House Gallery
- Senate Gallery
- Exterior steps
- State Office Building

PARKING

The location of satellite truck parking has been an ongoing issue with the press companies. Press trucks have been parking on the public sidewalks, lawns, and terraces surrounding the Capitol Building. Bundles of wires are then run from these trucks into the Capitol's broadcast recording

areas. Some press companies are currently using fiber optic cable bundles. Other press companies are using coaxial cable bundles. One proposal is to provide "pool feeds" from several locations in the Capitol Building to an area specified for the parking of satellite trucks. Spaces within the building which have been suggested for these feeds include:

- Governor's Reception Room
- First floor west wing corridor (outside the Governor's Anteroom)
- Second floor entrances to each of the chambers
- Rotunda
- Exterior front steps.

HISTORICAL SPACES

- Governor's Dining (currently used as office space by Outstate Press)

OTHER CRITERIA

- **HVAC** – The current Press Corps offices have uneven heating and cooling, and minimal air exchanges. There are also drafts in B22. In the B12 area, there has been some flooding and mold problems. The equipment for the broadcast media produces additional heat.
- **Security** – Offices are open to provide visitor access.
- **Lighting** – Overhead fluorescent lighting in low ceilings makes it difficult to view computer and video monitors. Most broadcast media staff have brought in desk lights and leave the overhead lights off.
- **Recycling** – Recycling requirements for the offices are shared.

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Print Media	Associated Press	Reporter (3) all year	MSC, #B28E	A (3)	needs to be central to other press offices, in main press area	central to Capitol	n/a		x	n/a	all of the media groups are members of the associated press
	ECM Publishers		MSC, #B12B	A (1)	in main press area	central to Capitol	n/a		x		-
	The Forum		MSC, #B12C	A	in main press area	central to Capitol	n/a		x		-
	Legal ledger	Reporter (2) in B28A all year, Reporter (1) one in B22 during session	MSC, #B28A / #B22	A (3)	share with Kare 11 and out state press, two separate areas	central to Capitol	n/a		x		rent B22 space only during session
	Duluth News Tribune		MSC, #B12A	A	in main press area	central to Capitol	n/a		x		-
	St Paul Pioneer Press	Reporter (4) all year	MSC, #B14	B (4)	separate from main media area	central to Capitol	n/a		x		-
	Star Tribune		MSC, #B14 / #B28B	B	share with Pioneer Press in B14, two separate areas	central to Capitol	n/a		x		-
	Free Press		MSC, #B22	A	out state area, separate from main press area	central to Capitol	n/a		x		rent space only during session
	St. Cloud Times	Reporter (1) during session	MSC, #B22	A (1)	out state area, separate from main press area	central to Capitol	n/a		x		rent space only during session
	Mesabi Daily News	Reporter (1) during session	MSC, #B22	A (1)	out state area, separate from main press area	central to Capitol	n/a		x		rent space only during session

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Print Media (cont.)	Post-Bulletin	Reporter (1) all year	MSC, #B22	A (1)	out state area, separate from main press area	central to Capitol	n/a		x		-
Broadcast Media	WCCO radio		MSC, #B28H	B	in main press area	central to Capitol	n/a		x	live broadcast from office	-
	WCCO television	reporter (1), photographer (1)	MSC, #B28F	B (2)	in main press area	central to Capitol	n/a		x	cables to satellite truck, live broadcast from office and other locations in capitol	-
	KARE 11	Reporter (1), editor (1) and photographer (1)	MSC, #B28A	B	share with Legal Ledger, in main press area	central to Capitol	n/a		x	all coverage taped at other locations in capitol	Write and record voice-overs, edit film, and store videos. Would like separate space with acoustic separation for recording
	Twin cities Public Television (TPT)	Reporter (1) all year.	MSC, #B12D	B	in main press area	central to Capitol	n/a		x	all coverage is transmitted to main office in downtown St. Paul via fiber optics	All editing and recording of video is done off of site. Concerns of flooding, mold conditions.
	Hubbard Broadcasting		MSC, #B28G	B	in main press area	central to Capitol	n/a		x		-
	Minnesota Public Radio		MSC, #B14	B	in main press area	central to Capitol	n/a		x	large amt. Equipment	-
	Minnesota News Network		MSC, #B28C	A	share with the Forum, in main press area	central to Capitol	n/a		x		-
Shared Media Space	mail boxes	boxes for all media groups, in corridor	MSC, #B28		in main press area; central to staff	n/a	n/a		x	n/a	Recycling- shared with all media

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Shared Media Space (cont.)	break area	counter with private refrigerator, coffee makers, etc. which are shared by media	MSC, #B12 / #B22		in main press area and in out state area; central to staff	n/a	n/a		x	kitchen equipment	-
	lockers	not used	MSC, #B12		in main press area; central to staff	n/a	n/a		x		-
	copy area	shared copier which is used by all the media	MSC, #B12		in main press area; central to staff	n/a	n/a		x	copy equipment	-
	fax	located in Post-Bulletin and Associated Press offices, shared with other media in area	MSC, #B28E / #B22	n/a	in main press area and in out state area; central to staff	n/a	n/a		x	fax equipment	-
Future Media Space	*press conference room*	*room for press conferences and interviews*	*none*	*for about 40-60 people*	*near press area, acoustically separated*	n/a	n/a		x	*wired for all media and for presentations*	-

Technology requirements for all media - phone, internet access, senate and house TV connection (cable TV).

Key Needs:

- **Additional small meeting or conference rooms.**
- **Co-location of Majority and Minority Senators.**
- **Hearing rooms with larger public seating capacities and more technology integration.**

Enabling legislation: Minnesota Constitution, Article IV
Occupied square footage: 84,940 sq. ft. in the Capitol Building
20,320 sq. ft. in the State Office Building
Capitol staff count: 250 office staff (including 39 Senators) + pages + interns
Total staff count: 319 office staff (including 67 Senators) + pages + interns

TENANT DESCRIPTION

The Minnesota Senate, along with the Minnesota House of Representatives, constitutes the legislative branch of the Minnesota State Government. The Senate is made up of 67 Senators. The Senate is divided between the Majority political party (currently the Democrats), the Minority political parties (currently the Republicans and sometimes third Party or independent members). Each party has leadership and partisan research staff. The Secretary of the Senate, Senate Counsel and Research, and Senate Fiscal Analysis provides non-partisan support functions for the Senate.

Public participation is a vital part of the legislative process. The primary interaction with the legislature occurs during committee hearings. Refer to the Public Needs Summary Hearing and Meeting Spaces in Appendix B.

The Senate is the largest single tenant in the Capitol Building. Besides storage, the Senate spaces are divided into the following categories of use:

OFFICE SPACE FOR SENATE – MEMBERS AND PARTISAN STAFF

SENATE MAJORITY CAUCUS

Senate Majority Offices – The majority party Senators and their staff have offices throughout the Capitol Building. Currently there are 39 majority party Senators. Each Senator is assigned a Legislature Assistant. The work of the Senators is divided among different committees and divisions. The majority party holds the chair and vice-chair positions on all committees. The Senate currently has 23 committees and divisions. These Senator's and staff offices are grouped together in committee suites. A typical committee suite has offices for a committee chair, the committee vice-chair, two legislative assistants (one for each Senator), and a committee assistant. The President of the Senate and Majority Leader of the Senate currently have larger offices for additional staff.

Senate Majority Research – The Senate Majority Research is located on the ground floor north wing. Current staff count is 17 positions. Senate Majority Research provides majority Senators with general research, press releases, radio actualities, bill drafting, and constituent

services. Majority research provides a weekly hotline for information and answers public calls for help from Senators. Adjacency to hearing rooms is critical. Research staff often attend committee hearings and collaborate on issues with the Minority Research. Staff workspaces are tight and lack privacy. Private offices within the space are also quite small and lack acoustical privacy. Due to space constraints, shared equipment can be found in some private offices. This shared equipment includes a graphics area, an audio booth, and recording equipment. A conference table is located in the center of the staff workspace that is suitable for team discussions, but not private meetings. Smaller private meeting spaces are desired.

A legislative assistant sits near the entry doors. Visitors are Senators and other Senate staff. Recycling requirements are more intensive than other divisions, including two large plastic drums, four standard square containers, and one round container, one for plastics and glass. Majority Research staff has noticed poor air circulation within the office space. The air intakes are too close to the loading area. Exhaust fumes are drawn into air intakes and filtered through the mechanical system into the offices. The office space is overheated in the winter and overcooled in the summer.

SENATE MINORITY CAUCUS

Senate Minority Offices – The Senate Minority Offices are located on the ground and first floor of the State Office Building. Current staff count includes 68-70 positions, including Minority Research. Currently there are 27 MInority Party Senators. Senators on one floor and researchers/support on the other. A legislative assistant is located at main entrance. However, many of the visitors enter the space on the ground floor from the hallway that leads to the Capitol Building. Visitors include Senate staff, legislators, and the general public. This division has outgrown their assigned working space. The space was originally designed for 33 Senator offices around the perimeter of the building with open staff offices in the middle. The Senate Minority Leader's office is the largest. The Minority Senators would like to be located in the same building as the Majority Senators. The division enjoys the cohesiveness of working in close proximity to each other. Current meeting rooms used in the State Office Building include #13, #14, and #148. During session, the division uses rooms 125 and 330 in the Capitol Building. The Minority caucus has the need for a meeting room that holds 70 people for caucus meetings and meetings with the public. Minority Senators and staff require confidential spaces. Public meeting spaces are also required for constituents and lobbyists.

Senate Minority Research – The Senate Minority Research is located on the ground floor of the State Office Building. The Minority Research provides Minority Senators with general research, press releases, radio actualities, and constituent services. Research staff often attends committee hearings. The Senate space in the State Office Building was not originally designed for Minority Research staff. The Research staff has several workstations within private offices.

SENATE INDEPENDENT MEMBER

The single independent Senator's office is also located in the State Office Building. Current staff count is two positions.

OFFICE SPACE FOR SENATE – NON PARTISAN STAFF

SENATE COUNSEL AND RESEARCH

The Senate Counsel and Research are located on the ground floor east wing. Senate Counsel and Research is a non-partisan division that provides factual research; drafts and amends bills and polices. One researcher and one counselor are assigned to each of the Senate committees and divisions. Staff space was designed with demountable partitions to preserve the historic integrity of the ground floor east wing corridor. Privacy is limited because the demountable partitions allow sound to carry over the suspended ceiling into adjacent workspaces. Current staff count includes 24 positions. During session the staff works closely with Senators, the Revisor's office (in the State Office Building), and Senate Information Systems. The law library is located in conference room G-21, which has four doors and serves as a corridor to adjacent offices. A mechanical room must be accessed through the conference room. Counsel and Research staff will often use conference space G-23K, located near fiscal analysis. The staff needs space for short impromptu, private meetings with two to four people. Counsel and Research staff has expressed a desire to have Internet and LAN connections in the meeting rooms. Visitors are greeted and guided by a receptionist. Visitors include Senators, lobbyists and some general public. The Counsel and Research staff has noticed uneven heating and cooling problems with increased humidity in the summer months in the office spaces.

SENATE FISCAL ANALYSIS

– The Senate Fiscal Analysis is located on the ground floor east wing. Current staff count is 10 positions with one future. Senate Fiscal Analysis is the non-partisan division responsible to for research and budget analysis to Senate members. Staff is currently spread out in the east wing of the ground floor and shares space with Counsel and Research. Staff would work more efficiently if they were in one area with shared workspace. Current staff workspaces are tight and do not meet ADA accessibility guidelines. Conference room 23K is shared with finance committees, Counsel and Research, and Senators. The staff would prefer to have a dedicated conference room for impromptu and planned staff meetings. The analysts often attend finance, education, and tax committee meetings and public hearings to discuss agency and department finances. Proximity to hearing rooms is critical to work function. Traffic flow through the division has been an issue because the meeting room is central to many other divisions. Work process is confidential, so the office space requires some security measures from the general public. This group does not have any reception functions. Visitors include the general public, Senate members, and lobbyists. Fiscal analysis staff has noticed extreme temperature changes within the office space.

SECRETARY OF THE SENATE

Secretary of the Senate is the Chief Administrative Officer of the Senate. The Secretary of the Senate acts as parliamentarian and as administrator of the internal operations of the Senate. The Secretary of the Senate is located in room 230. The administrative operations of the Secretary of the Senate are divided into several different departments. They are: Senate Front Desk, Senate Information Office, Senate Engrossing Office, Senate Media Services, Senate Fiscal Services, Senate Index, Senate Human Services, Senate Sergeant at Arms, Senate Publications and Senate Information Systems.

- **The Senate Front Desk -** Staff are located on the second floor west wing. Current office staff count is six positions. They provide administrative help for the Secretary of the Senate, processes bills for committees and administrate the Senate internship program. Proximity to the Senate Chamber is critical during legislative session to initiate bill processing. During a floor session, staff will relocate into the Chamber and the engrossing staff will occupy their desks. The office works closely with the Department of Administration to facilitate and execute activities and programs within the Capitol Building. The office gains heat from the southern exposure.

- **The Senate Information Office** – The Senate Information Office is located on the second floor west wing. Current staff count is four positions during the interim and six during the session. The office acts as a service center to provide and distribute legislative information to the Senate staff and the general public. The Information office receives over 100 visitors per day during legislative session hours. Most visits are short; therefore, seating is not required. Legislative paperwork is available on the internet, but this does not eliminate the need for paper copies. Currently, the information office uses the Secretary of the Senate's conference room 231 for small meetings. When privacy is not critical, the staff will meet in the Senate Chamber. The staff will book Senate hearing rooms for larger meetings when they are available. Due to the frequent use of all these rooms during the legislative session, a conference room to seat 25 people is desired. Conference rooms are scheduled for internship interviews, orientation and training, civic education, guest speakers and staff meetings. A small meeting room for two to four people within the office is also desired. When the Information Office is closed, materials are often left outside the front door. The information counter does not meet ADA accessible guidelines.

- **The Senate Engrossing Office** – The Senate Engrossing Office is located on the ground floor west wing. Current staff count is two full time positions and five temporary positions during session. The office incorporates amendments that have been adopted by the Senate or House into a bill. During the legislative floor session, the Engrossing Office will temporarily use the offices of the front desk for closer proximity to the Senate Chamber.

- **Senate Media Services -** Current spaces used by Senate media include an office in B-44, a photographic darkroom in B-58, a TV studio in G-4 and a TV production and master control room in B-29. Current staff count is eight full time positions and seven

temporary positions. The division provides all broadcasting, multi-media and photography services for the Senate. Each space requires special lighting, special heating, cooling and ventilation and special acoustical control. Existing offices are too small. Low level task lighting is needed for film editing and production. Due to space constraints, film processing and photo developing are done in separate darkrooms. These functions should be located in the same room. Ventilation in the darkrooms is not adequate. The TV production and control rooms were recently moved into newly remodeled space, which functions well. The TV studio does not have enough ceiling height to provide appropriate lighting for broadcasting. The air-conditioning unit, which serves the studio, is very noisy. Back-up power is desired for all of the TV broadcast and editing equipment. Senate members, staff and agency personnel visit the studio. Senate members request photos several times per week. An area for two to four people to review photographic contact sheets over a light table with a near-by computer is needed. Meetings in the division are usually staff meetings to review production and publication. Since the office does not have a conference room, staff will use Senate hearing rooms. When hearing rooms are not available, the staff will often meet in offices. A dedicated meeting room is needed for this group. Media Services could be located outside of the Capitol Building. Storage needs are currently met offsite. A common press conference room is desired, which should be set up as a studio with controlled lighting, acoustics, ventilation, and technical wiring. Optimal ceiling height for studio space is 15'-0" to 20'-0". The room should accommodate 25 people standing and floor space for eight to nine video cameras. A similar size to the Governor's reception room would be adequate. Lighting and ventilation within the office space requires upgrading. Truck diesel fumes from the loading dock infiltrate the office space through air intakes.

- **Senate Fiscal Services** – Senate Fiscal Services are located on the second floor east wing. Current staff count is five positions. The division provides financial support services to Senate members and staff. These services include payroll, employee benefits, accounts payable and expenses. Meeting space is required for orientation of new employees. Visitors include Senate members and staff, new employees, auditors (two to three weeks a year) and software consultants. Conference room 229 and the SIS training room are used for meetings, when available. Current open offices do not provide privacy for discussing private information with Senate staff. Staff offices are not ergonomically designed. High ceilings require the use of desk lamps for adequate task lighting. Filing space consumes half of the office space. Fiscal Services is currently located outside other Senate offices. There is a desire to be closer to the Senate Administrative and Human Resources. Fiscal Services staff has noticed extreme temperature changes within the office space, especially in the summer months with heat exposure. The area, which faces south, gets overheated, especially in the summer.

- **The Senate Index** – The Senate Index is located on the first floor north wing. Current staff count is six positions. The division provides journal information and content summaries of legislative bills for the Senate members in the Chamber. The Senate Journal is a record of Senate floor proceedings. The Index division also monitors and records all events on the chamber floor for print and internet documentation. All recorded events are compiled at the end of the biennium in a print index. During session,

pages run to and from the index offices and Senate Chamber. Visitors include the general public with questions one to three times a week. The office currently satisfies staff space and working needs. Air circulation within the office could be improved. The ventilation system in office 110E (formerly a vault) does not generate enough circulation to balance heat from computer equipment. High office ceilings require the use of desk lamps for adequate task lighting.

- **Senate Human Resources** – Senate Human Resources is located on the second floor west wing (adjacent to the Secretary of the Senate). Current staff count is one full time and one position that is shared part time with the Secretary of the Senate. An additional full time position is needed in the near future. The division is responsible for Senate staffing functions, orientation, policy development, and professional and performance management. Additional room for future staff is not available. All meetings with the human resource director are confidential and require acoustic and visual privacy. Meetings with Senate staff may involve conflict management and other sensitive issues. These meetings require use of a conference room, usually G-1C in the Sargent at Arm's office. Training sessions with new employees are often held in rooms G-15, 107 and 112. The Director has noticed the Senate workforce growing older and an increased need for ergonomic furnishings and equipment. Temperature fluctuations within the office are extreme throughout the year.

- **The Senate Sergeant at Arms** – Offices are currently spread out on the ground floor west wing. Staff offices should be located together. Other offices and storage are located in the basement. The Sergeant's office has 10 full time positions and 11 temporary positions. The division is responsible for security, Senate facility services, Senate post office, and Senate parking. All Senate meeting and hearing rooms and the Chamber are scheduled through the Sergeant's office. The legislative assistant is responsible for scheduling the Senate hearing and meeting rooms. Daily meetings within the Sergeant's office include vendors, Senators, press, Department of Administration staff and Plant Management staff. The entrance to the Sergeant's office is located in the west entry vestibule. Upon entering, one must pass the private offices prior to reaching the legislative assistant. This sequence makes it possible for visitor's to enter the offices without being identified by the legislative assistant. Approximately 60% of visitors go directly to the Sergeant's office through the west entry vestibule. Conference room G-1C is dedicated to the Sergeant, but often is shared with other Senate staff. The conference room has several file cabinets in it because there is no dedicated file storage area in the office. Many of the storage areas in the basement have been converted to office space. The west ground vestibule is used to store some of the Senate's furniture inventory. Senate supply, located in the basement, is the primary point for Senate mail distribution, newspapers, and miscellaneous supplies. Adjacent to the supply center, there are several storage areas for wheelchairs, audio equipment, office supplies and furniture. The Sergeant's office often receives large shipments of office supplies and furniture. Currently there is no staging area for receiving these shipments. The Sergeant's office could be located outside of the building. Storage space in the basement would need to be maintained, as well as a page room and a Sergeant's temporary office in the Capitol

Building. The Sergeant's office has also identified a need for a shower and locker room facility, which could be shared with all building tenants.

- **Senate Publications** – Senate Publications is located on the ground floor east wing. Current staff count is seven positions during session and two positions in the interim. Workspace becomes crowded during the session period, with two to three employees in a private office. The Publication staff provides summaries of all committee hearings and floor sessions for print and internet documentation. The division also puts out a weekly newsletter, election and staff directory, and maintains non-statute and non-bill portions of the website for the Senate. The office works with the House to issue joint publications, directories and seating charts. In addition, the staff works with the international coordinating presenter. The events are usually held in hearing room 107 and 125 of the Capitol Building. The staff also works with the Secretary of the Senate and attends committee hearings. *Note: Senate Publications was relocated to the ground floor east wing of the Capitol building in January 2001, after interviews were conducted.*

- **Senate Information Systems** – The Senate Information Systems' office is located in four areas of the building, on three separate floors. The SIS offices are located on the ground floor and in the basement. The main duplicating area is located in the basement. The training room is located on the third floor. The department could work more efficiently if all of the offices and the training room were located together. Current staff count includes 15 positions. SIS administers the computer systems within the Senate offices, provides assistance to the approximately 40 staff who are accessing the network remotely, trains Senate staff and members, assists with computer applications, plans for system upgrades, and provides computer system maintenance and backup. Staff space is minimal, with two to three workstations in a private office. The SIS staff need a workbench or workroom for repairing equipment. Current repair work is located on the technician's desk, the floor, and the hallway outside of the offices.

  Network wiring and hubs are located throughout the Senate offices in equipment closets. Some of these closets also serve as custodial closets, which is a security issue. SIS does not have keys to some of the closets. Also moisture from mops and liquid cleaners could damage the wiring and network hubs. Better security and ventilation systems are critical to all Senate staff data closets and the core system.

  Visitors to SIS include Plant Management, Senators, Senate staff, and vendors. Meetings are usually held in conference room G-1 (located in the Sergeant at Arms office) and involve staff and vendors. Conference room G-1 is a heavily used room and has limited availability during the legislative session. SIS would like to have a dedicated meeting room for 15 people. SIS staff also needs a conference space that is technologically advanced for training, demonstrations and presentations. The room should be one and a half times the size of conference room 107, without the column obstructions. This room could be shared with others.

  SIS receives large delivery orders on a regular basis. These include computer equipment and paper supplies. A secure area is needed for staging and distribution. Currently, this

occurs in the office area. Equipment is piled in the hallway, blocking traffic. The existing route from the loading dock to the SIS department is confusing. Regular sized pallets will not fit in the freight elevator and must be brought in on the ground floor. The duplicating office also has very limited storage for paper. Some paper is stored in the corridors of the basement floor. Large quantities of paper are warehoused by the supplier and brought over in small shipments. This is not efficient or cost effective. SIS staff would like to have a shared receiving area with a lockable area for storage of deliveries. Separate, secured storage areas could be shared with all of the building tenants.

Staff space in all areas of SIS and the duplicating center are minimal. The space for the duplicating machines is smaller than the space usually required by the manufacturer. The next technological advancement in copy machines will make the machines larger. As the role of technology increases Senate staff become more dependent on the SIS division. Immediate adjacencies to Senate staff are not critical, since much of the communication is electronic.

HEARING AND MEETING ROOMS

Most hearing and meeting rooms in the Capitol Building are assigned to the Senate. Refer to Public Needs Summaries - Hearing and Meeting Space in Appendix B.

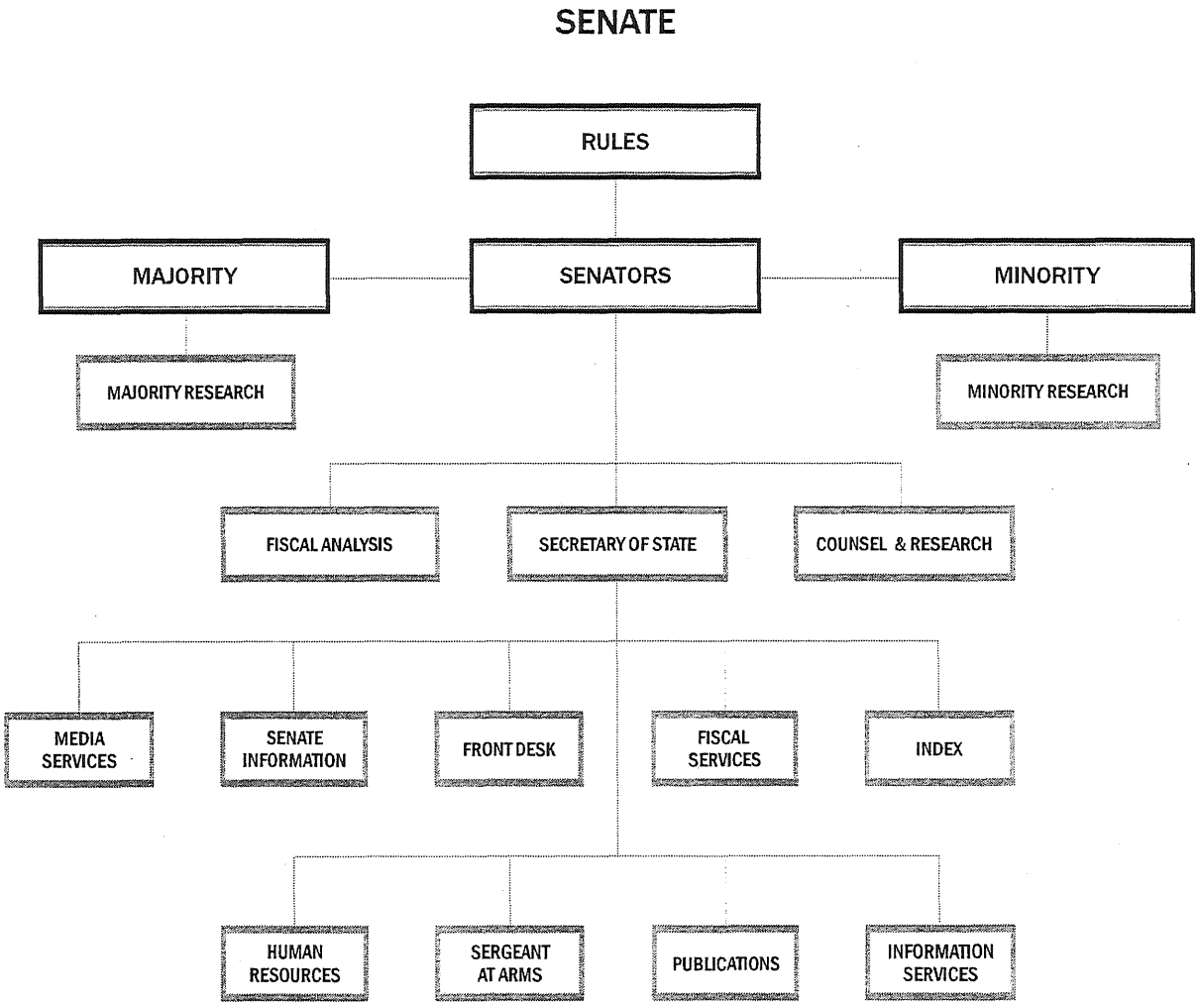
HISTORICAL SPACES

- Senate Chamber and Galleries (public, ceremonial)
- Senate Retiring Room (ceremonial)
- Former Chief Justice's Office (small private meeting room)
- Ground floor east corridor (offices)

OTHER CRITERIA

- **HVAC** – Temperature fluctuations within the workspace are extreme throughout the year. The temperature varies with location in the Capitol Building.
  Lighting – Historical spaces have high ceilings and require special lighting for historic artwork. Generally office spaces have high ceilings and require the use of desk lamps for adequate task lighting.
- **Security** – All storage spaces are secured.
- **Recycling** – Recycling is shared within each office area.

ORGANIZATIONAL CHART



Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Office Space	Private office	Senator (Committee Chair)		J (1)	near LA, CA and vice-chair	more desireable offices are closer to chamber	hours vary w/ session		X		Whenever possible, Senator offices should have windows
	Private office	Senator (Committee vice-chair)		J (1)	near LA and chair		hours vary w/ session		X		Whenever possible, Senator offices should have windows
	Private office	Committee Assistant (CA)		G (1)	near chair		hours vary w/ session				
	Open workstation	Legislative Assistants (LA) (2), reception		B (2)	near Senator offices		hours vary w/ session		X		(2) visitor chairs are required in reception space.
		Page (1) - no office space		N/A			hours vary w/ session				–
Shared Space	Small Meeting Room	private meeting room		seats 4 to 6 people	in or near committee suite	–	–		X		–
	Copy Area	Copy machine, printer		N/A	in committee suite	–	–		X	copy equipment	
	Break Area	Counter for misc. supplies, coffee, and snacks		N/A	near committee suite	–	–		X	–	–
	Storage	area for committee carts & misc. office supplies		N/A	in committee suite	–	–		X	–	–
	Closet	closet for coats		N/A	near entrance to suite				X		

This represents a typical suite. It is possible to have 2 or more committes in a suite.

Items in standard font are current information

Items in italics are future needs

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Office Space	Private office	Director (1)	MSC, #	G (1), *I(1)*	Asst. Director, staff	hearing rooms, Senate chamber, Senators	work schedule varies with session		x	Cable television at each desk	–
	Private office	Assistant Director (1), holds recording control board for tape & CD recording, sound proof booth with telephone, and light board	MSC, #G-11F	C (1), *H(1)*	Director, staff	hearing rooms, Senate chamber, Senators	–		x		Currently being remodeled to accommodate accessibility needs of staff with back problems
	Private office	Researcher II (7)	MSC, #	D (7), *H(7)*	–	hearing rooms, Senate chamber, Senators	–		x		–
	Open workstation	Researcher I (2)	MSC, #	A (2), *B(2)*	–	hearing rooms, Senate chamber, Senators	–		x		–
	Open workstation	Legislative Assistant (1), reception	MSC, #G-13	A (1), *B(2)*	Entrance to Majority Research	hearing rooms, Senate chamber, Senators	–		x		(2) visitor chairs are required in reception space.
		Page (1) - no office space, uses central office space when not running errands	none	N/A	Central to Majority Research staff	hearing rooms, Senate chamber, Senators	–				–
Shared Space	Conference Area	open office are, no privacy	MSC, #G-11	seats 8 people	near paper storage	–	–		x	Large table and TV/VCR cart	–
	Copy Area	Copy machine, fax, printer in open office area	MSC, #G-11	N/A	Central to Majority Research staff	–	–		x	copy equipment	need to provide more recycling. Currently have 4 sq. and 1 round containers
	Break Area	Counter in hallway for misc. supplies, coffee, and snacks	MSC, #G-11	N/A	Central to Majority Research staff	–	–		x	–	–
	Library	Statue books & session laws in bookcase	MSC, #G-11	N/A	Central to Majority Research staff	–	–		x	–	–

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
	Storage	Cabinet for supplies in electrical room	MSC, #G-13A	N/A	Central to Majority Research staff	–	–		x	–	–
	Restroom	Unisex	MSC, #G-13C	1 stall	–	–	–		x	–	–
	Closet	Server	MSC, #G-13A	N/A	–	Part of data/closet infrastructure	Needs to be secure; currently without any security		x	Network system	High temperature within closet- requires ventilation
Future Shared Space	*Graphics Room*	*Central area for graphics computers, layout table*	none	*N/A*	*Asst. Director*	–	–		x	–	desks and conference table used when available
Future Shared Space (cont.)	*Recording Room*	*Recording area for daily actuaries with separate sound proof room*	none	*N/A*	*Asst. Director*	–	–		x	*audio equipment*	*Needs to be large enough for equipment, small desk or table and a chair*
	Conference Room	*Private meeting space*	Future	*seats 10 people*	*Central to Majority Research staff*	–	–		x	–	–
	Copy Room	*Copy machine, fax, printer*	*Future*	*N/A*	*Central to Majority Research staff*	–	–		x	*copy equipment*	–

Items in standard font are current information

Items in italics are future needs

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Minority Office Space	Private Office	Chief of Staff (1)	SOB, #147	K (1)		closer to majority Senators	hours vary w/ session		X	–	–
	Private Office	Senators (27)	SOB, offices on perimeter of workspace	J (24)	Adjacent to Legislative Assistants	–	hours vary w/ session		X	–	–
	Open workstation	Receptionist (1)	SOB, 1st floor entry	B (1)	Entrance on first level	–	hours vary w/ session		X	–	Seating area for 6+ people
	Open workstation	Legislative Assistant (30)	SOB	C (30)	Senators' offices	–	hours vary w/ session		X	–	–
	Open workstation	Researchers (10) interim (12) session	SOB, ground floor	C (10-12)	Legislative Assistants	–	hours vary w/ session		X	–	–
		Pages (3 during session)	none	N/A	–	–	hours vary w/ session		X	–	–
		interns (27)	none	N/A	–	–	hours vary w/ session		X	–	–
Independent Office Space	Private Office	Senators (1)	SOB, #51	J (1)	near other Senators	–	hours vary w/ session		X	–	–
	Open workstation	Legislative Assistant/ Receptionist (1)	SOB, #51	C (1)	Adjacent to Independant Senator	–	hours vary w/ session		X	–	–
Minority Shared Space	Conference Room	Conference, meeting space	SOB, #14	seats 14	Central to Minority staff	–	should be in secured room		X	–	–
	Library	Conference, meeting space	SOB, #13	seats 15 people	Central to Minority staff	–	–		X	–	Bookcases around perimeter of room hold journals. Many journals are also located outside room.
	Break room	counter with sink, appliances, and tables	SOB, ground floor	seats 12 people	Central to Minority staff	–	–		X	–	–
	Phone Room	phone/ data closet	SOB, first floor	N/A	Central to Minority staff	Part of Senate network	–		X	–	–

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Minority Shared Space (cont.)	Fax Areas	faxes	SOB, first and ground floor	N/A	Central to Minority staff	–	–		X	–	–
	Toilet Rooms	unisex	SOB, first and ground floor		Central to Minority staff	–	–		X	–	–
	Copy Areas	2 copiers, supplies	SOB, first floor	N/A	Central to Minority staff	–	–		X	–	–
	Supply room	supplies	SOB, first floor	N/A	–	–	–		X	–	–

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Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Office Space	Private office	Director (1)	MSC, #17-19/ 23	I (1)	Central to Counsel & Research staff	Senate Fiscal Analysis	Closed door is sufficient		X	Revisors computer	demountable walls do not create enough acoustic privacy
	Private office	Attorneys (14)	MSC, #17-19/ 23	G (14)	Central to Counsel & Research staff	Senate Fiscal Analysis	Closed door is sufficient		X	Revisors computer	demountable walls do not create enough acoustic privacy
	Open workstation	Analysts (9)	MSC, #17-19/ 23	G (9)	Central to Counsel & Research staff	Senate Fiscal Analysis	Closed door is sufficient		X	Revisors computer	demountable walls do not create enough acoustic privacy
	Open workstation	Support staff (12)	MSC, #17-19/ 23	B (12)	Central to Counsel & Research staff	Senate Fiscal Analysis	Closed door is sufficient		X	Revisors computer	demountable walls do not create enough acoustic privacy
	Open workstation	Secretary (1) + (2 during session)	MSC, #G-17	B (2)	Adjacent to entry	–	N/A		X		demountable walls do not create enough acoustic privacy
	Open workstation	Law Clerks (2)	MSC, #G-17	A (2)	Adjacent to entry	–	N/A		X	Revisors computer	demountable walls do not create enough acoustic privacy
Shared Space	Conference Room / Library	meeting room, with law library around perimeter	MSC, #G-21	seats 14 people	Central to Counsel & Research staff	–	N/A		X	*internet access*	Shared with Finance committees, Senate members, and Fiscal Analysis.
	Break Area	Counter in hallway for misc. supplies, coffee, and snacks	MSC, #G-19A		Central to Counsel & Research staff	–			X	Appliance overload	used by 32 people
	Copy Area	Copy machine, supply storage	MSC, #G-18F	N/A	Central to Counsel & Research staff	–	N/A		X	–	–
	Copy Area	Copy machine, supply storage	MSC, #G-19C	N/A	Central to Counsel & Research staff	–	N/A		X	–	–
	Technology Closet	Server	MSC, #G-18H	N/A	near Counsel & Research staff	part of data infrastructure	upgrade Security measures		X	Network system	–

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Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Office Space	Open workstation	Director (1)	MSC, #G-24	B (1) *I(1)*	Senators	Counsil & Research, hearing rooms	hours vary w/ session		X	–	–
	Open workstation	Fiscal Analyst (3)	MSC, #G-24	B, *C(3)*	Senate Council & Research, Senators		hours vary w/ session		X	–	–
	Open workstation	Fiscal Analyst (4)	MSC, #G-22	B (1), *G(4)*	Senate Council & Research, Senators		hours vary w/ session		X	–	–
	Open workstation	Staff support (1)	MSC, #G-22	B (1)	N/A		hours vary w/ session		X	–	–
	Open workstation	*Fiscal analyst (2) moving form Counsel and Research Department*	Unknown	–	N/A		hours vary w/ session		X	–	–
	Open workstation	Staff Support	MSC, #G-22	B (1)	Central to Fiscal Analysis staff		hours vary w/ session		X	–	–
Shared Space	Conference Room	conference room, meeting space, (this conference room was turned into offices in Jan. 2001)	MSC, #G-23K	seats 8 people	Central to Fiscal Analysis staff	–	N/A		X	Power point and projection equipment	Shared with Finance committees, Senators, and Council & Research, additional conference room needed between these departments
	Break Area	Counter in hallway for misc. supplies, coffee, and snacks	MSC, #G-24C		Central to Fiscal Analysis staff	–			X	–	–
	Copy Area	Copy machine, supply storage	MSC, #G-24	N/A	Central to Fiscal Analysis staff	–	N/A		X	copy equipment	Shared with adjacent Senators
	Closet	Wiring and switching room	MSC, #G-24J	N/A	–	Part of data/phone infrastructure			X	Network system	Closet is accessed from toilet room and is used for custodial storage as well.

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Future Shared Space	*Conference Rooms (2)*	*dedicated conference room, meeting space*	*Future*	*seats 10-12*	*Central to Fiscal Analysis staff*	–	–		*x*	–	–

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Items in italics are future needs

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Front Desk Office Space	Private office	Secretary of the Senate	MSC, #231 A	I (1)	Information Desk staff, assist. Secretaries	Senate Chamber	-		X	-	Moves to Chamber during floor sessions
	Open workstation, *Private office*	1st Assistant Secretary (1)	MSC, #231 A	C (1) *G (1)*	Information Office, Sec. of Senate	Senate Chamber	-		X	-	Moves to Chamber during floor sessions, engrossing staff use office during session
	Open workstation	2nd Assistant Secretary (1)	MSC, #231 A	C (1)	Sec. of Senate	Senate Chamber	-		X	-	Moves to Chamber during floor sessions, engrossing staff use office during session
	Private office	3rd Assistant Secretary (1)	MSC, #G-1B	C (1)	Sec. of Senate	Senate Chamber	-				Moves to Chamber during floor sessions
	Open workstation	4th Assistant Secretary (1), Front desk Assistant (1)	MSC, #231 A	A (2)	Sec. of Senate	Senate Chamber	-		X	-	Moves to Chamber during floor sessions, engrossing staff use office during session
	Open workstation	Desk Assistant	MSC, #231	A (1)	Sec. of Senate	Senate Chamber	-		X	-	Moves to Chamber during floor sessions, engrossing staff use office during session
	Open workstation	Legislative assistant (1) part-time - shared w/ Human Resources Director	MSC, #231	B (1)	Sec. of Senate, Human Resources Dir.	-	-		X	-	-
	Open workstations	Open area with work surfaces for Pages (no dedicated workstations)	MSC, #B-29	room for 20 people	N/A	Central to Capitol Building	-		X	-	
Front Desk Shared Sapce	Conference Room	Conference room, meeting space.	MSC, #231B	seats 8	Central to Secretary of Senate	-	-		X	-	Shared with Information Office, Human Resources
	Copy Area	Copy machine, supply storage	MSC, #231, located in hall	N/A	Central to Information Desk	-	-		X	copy equipment	Shared with Information Office, Human Resources, Senators, Chamber

Items in standard font are current information

Items in italics are future needs

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Information Office Space	Information Desk	Provide up to date information and handouts (pamphlets/materials).	MSC, #231 open to public corridor	counter for 7 staff people	Information Desk staff	public access is req'd	-		X	-	Requires significant amount of storage for files, pamphlets, and other information materials.
	Open workstations	Director (1)	MSC, #231	A (1)	Information Desk staff, Secretary of the Senate		-		X	-	
	Open workstations	legislative clerks (3)	MSC, #231	A (3)	Secretary of the Senate	-	-		X	-	
	Open workstations	Temp Staff (2)	MSC, #231	A (2)	Secretary of the Senate	-	-		X	-	
Information Office Shared Space	Conference Room	Conference room, meeting space.	MSC, #231B	seats 8	Central to Secretary of Senate	-	-		X	-	Shared with Secretary of Senate and front desk
	Filing Area	Lateral file and rotating file for information storage	MSC, #231, located in hall	N/A	Information office	-	-		X	-	
	Copy Area	Copy machine, supply storage	MSC, #231, located in hall	N/A	Central to Information office	-	-		X	copy equipment	Shared with Secretary of Senate's, Human Resources, Senators
	Storage	Storage of bills, records, and journals	MSC, #B-10	N/A	-	-	locked 24/7		X	-	
Future Information Desk/ Office shared space	*Conference Room*	*Conference room, meeting space.*	*Future*	*seat 2-4 people*	*Central to Information office*	-	-		*x*	-	*For small private meetings*
	Conference Room	*Conference room, meeting space.*	*Future*	*seat 25 people*	*Central to Information office*	-	-		*x*	-	*For large private meetings, could be shared with other groups*

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Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Office Space	Open workstation *Private office*	Director (1)	MSC, #B-42F	G (1) *E (1)*	Studio, Production & Master Control Room, and photo dark room	On Capitol complex	Public access, locked during non-business hours		X	–	Seats (2) visitor chairs
	Open workstation *Private office*	Engineering & Operations Director (1)	MSC, #B-29	B (1) *E (1)*	near director	–	Public access, locked during non-business hours		X	–	*Workbench is needed for the Engineer*
	Open Workstation	Producer (3), Photographer (1), Production Coordinator (1), Editor (1)	MSC, #B-42B/C/G	A (6) *B (6)*	near director	–	Public access, locked during non-business hours		X	–	Small space for automatic film processing- add to photo darkroom in future.
	Open Workstation	Legislative Assistant (1)	MSC, #B-44A	A (7) *B (7)*	near director	–	Public access, locked during non-business hours		X	–	Reception and waiting area with (2) visitor chairs
	Private office	Temporary Staff (1)	N/A	None *E (1)*	–	–			X	–	–
	Open Workstation	Temporary Staff (2)	N/A	None *B (1)*	–	–			X	–	–
Shared Space	Studio	Recording and live broadcast studio	MSC, #G-4B	N/A	media office, production & master control room, Senators	On Capitol complex	No public access, locked all day.		X	Back-up power & Isolated elect. ground req'd	Windows are blocked, sound isolated space
	Editing Studio	Future Audio Room	MSC, #G-4A	8-10 comp. desks	near studio	–	No public access, locked all day.		X	Back-up power & Isolated elect. ground req'd	–

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Shared Space (cont.)	Control Room	Control room cut in for Senate, Studio, and House of Representatives	MSC, #G-4C	N/A	near studio	–	No public access, locked all day.		X	Back-up power & Isolated elect. ground req'd	–
	Vestibule	Houses dub rack and video storage	MSC, #G-4	7 comp. racks	near studio	–	should be in secured room		X	Back-up power & Isolated elect. ground req'd	–
	Sound Room	Video voiceovers	MSC, #G-4D	N/A	near studio	–	No public access, locked all day.		X	Back-up power & Isolated elect. ground req'd	Sound isolated space
	Production & Master Control Room	live production, signal master switching	MSC, #B-29	N/A	Media office, Studio, and Photo darkroom	On Capitol complex	No public access, locked all day.		X	Back-up power & Isolated elect. ground req'd	–
	Old Control Room	Storage	MSC, #B32	N/A	–	–	No public access, locked all day.		X	–	–
	Photo darkroom	photo processing (B&W)	MSC, #B-58A	N/A	near media offices, *should be in media offices*	–	No public access, locked all day.		X	Back-up power & Isolated elect. ground req'd	Limited space; vent operates at 25% capacity
	Storage	Videotapes, photo negatives	MSC, #317, Mezzanine	N/A	N/A	Long term off-site, short term near offices	No public access, locked all day.		X	Back-up power & Isolated elect. ground req'd	–
	Break room/ Copy area	Tables in hallway for misc. supplies, coffee, mail, and copy equipment	MSC, #42A	N/A	Central to Media office	–	No public access, locked all day.		X	copy equipment and appliances	used for staff meetings (no seating)
Future Shared Space	*Meeting Room*	*Conference room, meeting space with light table and computer.*	*Future*	*seats 15 people*	*Media office*	–	No public access, locked all day.		*X*	–	–

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Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Office Space	Open workstation	Accounts Payable Supervisor (1), Accounts Payable (1), Payroll (3)	MSC, #230	C (5)	Fiscal Services Staff	N/A	Keys with Sgt at Arms only		X	Separate computer and network system	Large draperies are currently used to cover the windows and help regulate Southern heat exposure. Employee work stations are not ergonomically designed.
Shared Space	Mezzanine	Temporary workroom for auditors (2-3 wk/year)/File storage, work area	MSC #230	seats 6 people		–	need privacy		X	–	Not accessible
	Conference Room	Shared meeting room	MSC, #229	seats 18 people	adjacent to fiscal	–			X		
	Copy Area	Open area for copy machine, supply storage, shredding machine, check printer, and folder	MSC, #230	N/A	Central to Fiscal Services	–			X	equip. needs	Check printing machine is noisy.
	Filing	Group filing in cabinets and boxes (past calendar and fiscal years)	MSC, #230 / mezzanine	80 SF	Central to Fiscal Services	–	Files locked		X	–	–
Future Shared Space	*Conference Room*	*Private conference room, meeting space*	*Future*	*N/A*	*Central to Fiscal Services*	–	–		*x*	–	–

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Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Office Space	Open office	Director (1), Indexer (2), Legislative Assistant (2)	MSC, #110B / #110C	A (5)	Index staff	–	–		X	Use of Senate and Revisor computer systems; large monitors	Daylight from large windows cause glare on computer screens. File cabinets provide surfaces for break area.
	Private office	Indexer (1)	MSC, #110E	H (1)	Index staff	–	–		X	Use of Senate and Revisor computer systems; large monitors	This space could be in an open office.
Shared Space	Copy Area	copy machine, supplies	MSC, #110B	N/A	Central to Index staff	–	–		X	–	–
	Storage	supplies (closet)	MSC, #110C	N/A	Central to Index staff	–	–		X	–	–

Note - Public Women's Restroom is accessed through office area. This restroom is not easy for the public to find. The doors from corridor 110 must be locked when office is vacant. The door from

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Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Office Space	Private office	Director (1)	MSC, #233	J (1)	Secretary of the Senate	public access for job applicants, through other Senate offices	Locked files & office; Panic button under desk to Capitol Security		X	–	4 person table is required for small meetings - will soon be adding training books. *Would like to increase table size or add a small meeting room for 6 people.*
	Open workstation	Executive Assistant (1) - part time	MSC, #231	B (1)	Secretary of Senate, HR Director		–		X	–	Shared part time with Secretary of Senate
	Open workstation	*Generalist (1)*	*Future*	*B (1)*	*HR Director*		–		*X*	–	–
Shared Space	Storage	Records Retention	With other senate documents in basement	N/A	–		–		X	–	–
	Closet	Server	MSC, #233A	N/A	–		Needs to be secured better		X	Network system	–
	Staff Training	use hearing rooms as available	MSC, #G15 / #107 / #112	N/A	N/A	–	–		X	–	Could use smaller conference room if one was available

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Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Office Space	Private office	Sergeant at Arms (1)	MSC, #G-1A	H (1)	Sergeant at Arms immediate staff	Senate Chamber, Sec. Of Senate, Senators, hearing rooms	hours vary w/ session		X	–	–
	Private office	Assistant Sergeant at Arms (1)	MSC, #G-3	G (1)	Sergeant at Arms	–	hours vary w/ session		X	–	–
	None	Assistant Sergeant at Arms (1) session only	MSC, #G-1	N/A	–	–	hours vary w/ session		X	–	–
	Open office	Legislative Assistant (1)	MSC, #G-1D	D (1)	Sergeant at Arms	–	hours vary w/ session		X	–	Room size and availability
	Open office	Sergeant Supply (1)	MSC, #B-43	C (1)	–	–	hours vary w/ session		X	–	–
	Open office	Legislative Assistant at Post office (2) - session only	MSC, #B-43	B (2)	–	–	hours vary w/ session		X	–	–
	None	Sergeant - general (3) all year, (8) session only	MSC, #G-1	N/A	–	–	hours vary w/ session		X	–	–
	None	Parking Marshall (2)	Parking Shack on Aurora Ave.	N/A	–	Capitol, parking	hours vary w/ session		X	–	–
	Open office	Elect. Tech. (1)	MSC, #317	C (1)	–	–	hours vary w/ session		X	–	Previously in room #B-43A. Low ceiling for staff workspace

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Shared Space	Conference room	Conference room, meeting space	MSC, #G-1	seats 8	Central to Sergeant at Arms office and Senate Information Systems		–		X	TV / VCR	Shared often with Senate Information Systems, Human Resources, & Senators during session. Also used for filing.
Shared Space (cont.)	Copy area	Copy Area (hall)	MSC, #G-3B	N/A	Central to Sergeant at Arms office and Senate Information Systems	N/A	–		X	–	Shared directly with Senate Information Systems. Adjacency is based on space and function, but not required
Future Space	*File room*	*Storage of files*	*none*	*size of H office*	*central to Sgt. Staff*	–	–		X	–	–
Shared Storage Areas	Senate Supply	Storage for misc. supplies, mail and newspaper pick-up	MSC, #B-43	ok size	–	–	–		X	–	Ancillary storage spaces are #B-43A,
	Storage	Storage for Secretary of Senate, Shredding	MSC, #B-17	–	–	–	locked		X	–	–
	Storage	Furniture	several areas in basement, west ground floor vestibule	*need to double area*	Easy access to offices and hearing rooms	–	–		X	–	–
	Storage	Audio Tapes of hearings and floor sessions			–	–	–		X	–	–
	Storage	Journals	MSC, #G-1D	*Increase about 25%*					X		–
	Storage	Equipment for meetings and presentations		current size ok	easy access to hearing rooms	–	–		X	–	–
	Storage	General Filing		*N/A*	–	–	–		X	–	–

Items in standard font are current information

Items in italics are future needs

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Office Space	Private office	Director (1)	SOB, #95	J (1)	Near Publications staff	hearing rooms, chamber	locked when office is empty (often during day)		X	TV in office	Works late on Thursdays to meet deadline and other days to cover sessions and hearings.
	Open office	Public Information Officer (1)	SOB, #95	C (1)	Near Publications Director	hearing rooms, chamber	locked when office is empty (often during day)		X	TV in office	–
	Open office	Public Information Specialist (1)	SOB, #95	B (1)	Near Publications Director	hearing rooms, chamber	locked when office is empty (often during		X	–	–
	Open office	Public Information Officer (1), Temporary (3)	SOB, #95	A (4)	Near Publications Director	hearing rooms, chamber	locked when office is empty (often during day)		X	TV in office	–
Shared Space	Storage	Pamphlet, directories, etc. are stored here and distributed by Senate	MSC, #B10	N/A	Near information office		kept locked		X	–	–

Note: Senate Publications moved into the Capitol in January 2001
Items in standard font are current information
Items in italics are future needs

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Office Space	Private office	Director (1), Engineer (1), Legislative Assistant III (1)	MSC, #G-1 / #B-17	G (3)	SIS staff	Accessible to Senate staff.	hours vary w/ session		X	–	–
	Open workstation	Help desk (1), Word Processing Supervisor (1)	MSC, #G-3	C (2)	Public, SIS staff	Accessible to Senate staff.	hours vary w/ session		X	raised floor	–
	Open workstation	LAN Administrator (1), Duplication Supervisor (1)	MSC, #G-3 / #B15	B(2)	SIS staff	Accessible to Senate staff.	hours vary w/ session		X	–	–
	Open workstation	LAN Manager (1), Project Specialists (3), Word Processing Operator (1), intern + (1) session, Assistant Network Specialist (3)	MSC, #B-17 / #G-3	A (9)	SIS staff	Accessible to Senate staff.	hours vary w/ session		X	–	Quieter environment for development and training is desired.
Shared Space	Filing	Group filing and backups in fireproof files	MSC, #G-3 (Hall)	3,4,&5 dwr. Lateral	SIS staff	N/A	–		X		–
	Copy Area	Copy machine used by all Senate staff	MSC, #G-3	N/A	SIS staff	Accessible to Senate staff.	–		X	copy equipment	Separate venting and air conditioning needed.
	Duplication Center	high speed and copy center	MSC, #B-15	N/A	near paper storage	Accessible to Senate staff.	Locked from public corridor		X	–	Requires wide entrance door for receiving paper pallets

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Shared Space (cont.)	Training Room	New employee training, software training sessions	MSC, #320	8-10 comp. desks	SIS staff	Near Senate staff.	needs to be secured		X	Network, presentations, video,printing	Need room darkening blinds for presentations, 7'-0" partition wall along hallway should be full height.
	Break Area	"Cyber Café" includes counter with sink, appliances, and tables	MSC, #B-17E	seats 8-10 people	central to SIS staff	N/A	–		X	kitchen equipment	Shared with temporary staff, Sergeants, and other Senate staff during session.
	Network Center	Location of network servers for all Senate staff	MSC, #G-3	7 comp. racks	central to SIS staff	N/A	should be in secured room		X	Server equipment, raised floor	Separate air conditioner needed.
Future Shared Space	*Conference Room*	*Conference, meeting space, small presentation, demo environment*	*Future*	*seats 15 people*	*central to SIS staff*	–	*Locked when not in use*		*x*	*Basic presentation tools, network*	–
	Conference Room	*Conference, meeting space, large presentation, demo environment*	*Future*	*seats 100 people*	–	–	*Locked when not in use*		*x*	*Advanced presentation tools*	*Large hearing room*
	Receiving Room	*Temporary storage of packages in locked cage*	*Future*	*N/A*	–	*Loading dock*	*Locked when not in use*		*x*	*N/A*	*Could be shared with other senate offices and other tenants, subdivided*
	Bench/ Workroom	*Unpacked product in process of being prepared for use, product in need of repair*	*Future*	*N/A*	*near SIS Technician*	–	*Locked when not in use*		*x*	*Multiple power/ data ports, task lighting*	–
	Storage Room	*For parts, extra equipment, area for recycling of computer equipment*	*Future*	*N/A*	–	–	*Locked when not in use*		*x*	*N/A*	–

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Items in italics are future needs

Key Needs:
- **Additional storage space is required**

Enabling legislation: Minnesota Statutes section 248.07, 248.10, 248.11
Occupied square footage: 66 sq. ft. (storage) + food bar
Capitol Staff count: No permanent staff, 1 owner/ operator + 1 help during busy times

TENANT DESCRIPTION

Services for the Blind provides business opportunities for blind and/or visually impaired vendor to operate small business at government agencies. Each vendor has the ability to choose which food services to operate. With satisfactory performance, a vendor may provide food services without contract expiration dates. Current services at the State Capitol include supply and maintenance of vending machines throughout the year and operation of a food bar during the legislative session. Current services are listed below:

- Five vending machines located in the south basement hallway leading to the restored cafeteria and one machine located adjacent to room 315. These machines are supplied and maintained all year long.

- A self-service food bar located on the second floor south dome corridor during legislative session. The food bar is only open on the legislative days (days the legislature has floor sessions). Service includes pre-packaged food items, coffee and beverages. Previous food operators allowed items to be served without proper ventilation, causing strong smells throughout the Capitol Building. Plant Management (PMD) provides hook-up for food bar equipment, including electrical and water connections.

- Several tenants have expressed the need for food to be easily available on the second floor during the legislative session. Several have also expressed a desire for the food bar to be open more than just on legislative days.

Services for the Blind occupies a portion of space in B10 for storage of food items and food bar equipment. Room B10b is used for storage of food items only. Approximately 20% additional storage space in B10b is requested to accommodate all of the food items.

OTHER CRITERIA

- **Security** – Storage rooms are locked when not in use.
- **Recycling** – Plant Management provides delivery and pick-up of bins for recycled paper, glass, and aluminum.

Key Needs:
- **Preservation of historic spaces**

Enabling legislation: Minnesota Constitution Article 6
Occupied square footage: 3,835 sq. ft.
Capitol staff count: No permanent staff

TENANT DESCRIPTION

The Supreme Court constitutes the Judicial Branch of the Minnesota State government. The majority of Supreme Court spaces have moved out of the Capitol Building into the Judicial Center. The Supreme Court Chamber, Consultation Room and Robing Room have remained in the Capitol Building under the control of the Supreme Court. No permanent staff are located in the Capitol Building. The Supreme Court transferred the historic Chief Justice Office to the Senate in 1993.

OFFICE SPACE

The Supreme Court Chamber – The Supreme Court Chamber is the primary historic space of the Supreme Court. Court sessions are held in the Supreme Court Chamber one-week (four days) of each month from September through June. The general public can observe the proceedings from the gallery, which is located in the chamber. If privacy is required, the entry doors to the chamber can be closed. The Judicial Marshall is responsible for scheduling non-court-related events. These events include meetings or ceremonies by members of the legislature and public groups. Extended use is rare due to the historic nature of the room. The Minnesota Historical Society tour allows the general public to observe the Chamber from the gallery space. All other visitors can observe the space from the vestibule gate. A hallway is located immediately behind the Supreme Court Chamber. This hallway is separated from the Chamber by heavy drapes to provide visual privacy. The hallway can not be physically or acoustically separated from the Chamber and the corridor doors to the hallway must be locked in order to secure the Chamber.

The Consultation Room – The Consultation Room was historically used by Judges to discuss and review court cases. Today, Judges return to the Judicial Center to discuss cases. The room, which is considered historically significant, requires restoration. Uneven humidity levels from the heating and cooling systems have affected the wood detailing in the consultation room. This room can only be accessed from the hallways behind the court chamber. Therefore, it cannot be used by others during Supreme Court proceedings. When there are not proceedings in the Chamber, the room could be used by other groups. Such use of this room must be scheduled with the Judicial Marshall.

Robing Rooms – Robing Rooms are located on each side of the consultation room. Each of these rooms has a vanity with two sinks, two toilet stalls, changing space and a closet. The

Supreme Court Judges use these rooms to put on robes and for private toilet facilities. Like the consultation room, robing rooms can only be accessed from the hallway.

HISTORICAL SPACES

- Chamber (public and ceremonial space)
- Consultation Room (private workspace)

OTHER CRITERIA

- **HVAC** – Humidity concerns in the Consultation Room.
- **Security** – There is no direct and secure route from the Judicial Center to the Capitol Building. Judges have raised a concern about this issue in the past.

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Office Space	Private office	Chief Justice Office (1)	N/A	J (1)	Immediate adjacency to court chamber	N/A	N/A	x		N/A	Given to Senate
Shared Space	Chamber	Mn Supreme Court Chamber. Cases heard 1 week (4 days) per month (September-May). Used as ceremonial space 5-10 times per year. Used by educational groups for mock trials.	MSC, #220A	seats about 50 people in gallery	hallway, consultation and robing rooms	Supreme Court presence is required. Historical tour destination.	Public may be present during hearings. Chamber can not be secured from hallway behind it.	x		Update required for sound/ recording system and cabling for new technology: connecting to network/ PowerPoint presentations.	Acoustic concerns: air vents within the room are noisy, echo is prevalent, dead spots of sound, flag often strikes against dome. Furniture is historic and recently refinished.
	Hallway	Used for assembly area before Supreme Court session.	N/A	-	Courtroom , consultation and Robing rooms	N/A	Locked to corridor SC01/SC02		x	-	-
	Consultation room	Designed as a large conference space to discuss and review court cases; currently it is seldom used. Sometimes shared with Legislative members and public groups.	MSC, #220	seats 8, standing room for 24	chamber via hallway	N/A	Locked doors open into hallway.	x		N/A	Needs restoration work; especially woodwork.
	Robing rooms	Used by judges for getting ready for court proceedigns. Also used for private toilet facilities.	MSC, #219 / #221	2 vanity sinks, 2 stalls	chamber via hallway	N/A	Locked doors open into hallway.		x	Telephone access	Used only when chamber is used.

Division/ Space	Area/ Function	Description of Area/ Function	Location (Bldg, rm #)	Notes for Size	Adjacencies		Security	Historic		Technology Required	Special Comments
					Internal	Capitol		Yes	No		
Supreme Court Future Needs	*Private elevator*	*Similar to Governor's elevator; allows justices to enter/exit the area without going through the public corridors.*	*None. Possible location in storage vault shaft (MSC, #222 / #123A / #123B)*	-	*Close to chamber*	*Not accessed from public area.*	*Secured for use by justices only.*		x	-	-

Notes:

* *Items in italics are future needs, those in standard font are current information*

INTRODUCTION

In order to use the Capitol for its best and highest use, we are proposing relocating some of the tenant spaces. These changes to tenant spaces are shown on the following plans. There are two plans per floor: the first plan shows the tenant spaces to be relocated and the second shows the reallocation of the tenant spaces. The spaces that are remaining the same use are not shaded.

INDEX TO APPENDIX D

The following information is a combination of information from the Real Estate Management Division and Miller Dunwiddie building background files. The information from Real Estate Management has the following disclaimer: "The Square footage numbers contained herein are calculated from an automated system and are for predesign purposes only. The automated floor plans and square footages will not be utilized and 'of record' until 7/1/2004". All of the other numbers are estimates and are for planning purposes only.

The following space definitions are the standard definitions from the Minnesota Department of Administration, Real Estate Management Division.

- **Office Space** - is finished space used for office related activities.
- **Storage Space** - is unfinished space used for storage.
- **Other Space** - is non-leased space such as: cafeterias, shared conference rooms, shared training rooms, in lieu of rent areas, etc.
- **Useable Space** - is computed by measuring the dominant portion* of the inside finished surface of exterior walls to the inside finished surface of building corridor and other permanent walls to the center of walls separating the leased premises from other tenant space. If more than 50% of an exterior wall is glass, the dimension is taken from the glass line. Vertical shafts, elevators, stairwells, dock areas, mechanical rooms and utility and janitor rooms are excluded. Restrooms, corridors, lobbies and receiving areas that are accessible to the general public or used in common with other tenants are also excluded. Where restrooms, corridors, lobbies and receiving areas are solely occupied by one tenant, the space is charged to that tenant. No deductions are made for columns, pilasters or other projections to the building if each is less than four (4) square feet.
- **Service Space** - is measured in the same manner as useable space. Service space consists of common corridors, lobbies, elevator lobbies, restrooms, janitor closets, electrical rooms, mechanical rooms, telecommunications rooms, etc.
- **Rentable Space**- is measure in the same manner as useable space consisting of the sums of useable plus (+) service space.
- **Shaft Space** - consists of all vertical penetrations of the floor such as stairwells, elevators and mechanical shafts.
- **Gross Interior Space** - is the sum of rentable plus (+) shaft space.
- **Gross Exterior Space** - is defined as the building space derived from measurements taken from the extreme outer finished surface of the outer building walls. No deductions are made from this area.

*Dominant portion shall be that portion of the inside finished surface of the permanent outer building wall which is 50% or more of the vertical floor to ceiling dimension measured at the dominant portion. If there is no dominant portion, or if the dominant portion is not vertical, the measurement for area shall be to the inside finished surface of the permanent outer building wall where it intersects the finished floor.

EXISTING AREAS

	Tenant	Basement Floor				Ground Floor				First Floor			
		Mtg.	Office	Stor.	Other	Mtg.	Office	Stor.	Other	Mtg.	Office	Stor.	Other
	Attorney General										5,405		
	Cafeteria				5,745								
	Capitol Security		7,103										
	Capitol Security (PMD)		225										
	Ceremonial Space		0						1,786				10,499
	Governor		893	178			3,830			1,217	4,040		
	House			5,052						1,413			
	Press Corps		3,562										
	Senate		8,281	3,597		2,016	23,133			6,090	7,716		
	Supreme Court			171									
	Qwest Communications				169								
	Services for the Blind			66									
	MN Historical Society (House)		1,229	596									
	MN Historical Society (PMD)			505									
	Vacant (B-5)		0										
	Vacant		1,862	1,105									
	SUBTOTALS	0	23,155	11,270	5,914	2,016	26,963	0	1,786	8,720	17,161	0	10,499

TOTALS				
1	useable space	40,339	30,765	36,380
2	common space	63,953	24,427	16,817
	(PMD 1752 Off + 5368 Storage)	7,120		
3	rentable space (1+2)	111,412	55,192	53,197
4	shafts	3,728	5,065	4,364
5	all interior SP (3+4)	115,140	60,257	57,561
6	outer building wall	7,056	5,051	4,970
7	Gross SQ FT (5+6)	122,196	65,308	62,531

The square footage numbers contained herein are calculated from an automated system and are used for predesign purposes only.
The automated floor plans and square footages will not be utilized and "of record" until 7/1/2004.

EXISTING AREAS

	Tenant	Second Floor					Second Floor Mezzanine				Third Floor			
		Mtg.	Office	Chamber	Stor.	Other	Mtg.	Office	Stor.	Other	Mtg.	Office	Stor.	Other
	Attorney General													
	Cafeteria													
	Capitol Security													
	Capitol Security (PMD)													
	Ceremonial Space					7,629								
	Governor													
	House	2,930	5,311	4,607							2,154	7,301		
	Press Corps													
	Senate	2,842	10,083	4,211				416			1,173	14,365	597	
	Supreme Court		64	3600										
	Qwest Communications													
	Services for the Blind													
	MN Historical Society (House)													
	MN Historical Society (PMD)													
	Vacant (B-5)													
	Vacant													
	SUBTOTALS	5,772	15,458	12,418	0	7,629	0	416	0	0	3,327	21,666	597	0

	TOTALS			
1	useable space	41,277	416	25,590
2	common space	10,856	37	12,618
	(PMD 1752 Off + 5368 Storage)			
3	rentable space (1+2)	52,133	453	38,208
4	shafts	5,452	271	19,582
5	all interior SP (3+4)	57,585	724	57,790
6	outer building wall	4,246	333	4,164
7	Gross SQ FT (5+6)	61,831	1,057	61,954

The square footage numbers conatined herein are calculated form an automated system and are used for predsign purposes only.
The automated floor plans and square footages will not be utilized and "of record" until 7/1/2004.

	Tenant	Third Floor Mezzanine				Fourth Floor				Total				
		Mtg.	Office	Stor.	Other	Mtg.	Office	Stor.	Other	Mtg.	Office	Chamber	Stor.	Other
	Attorney General									0	5,405		0	0
	Cafeteria									0	0		0	5,745
	Capitol Security									0	7,103		0	0
	Capitol Security (PMD)										225			
	Ceremonial Space									0	0		0	19,914
	Governor									1,217	8,763		178	0
	House					1,203				7,700	12,612	4,607	5,052	0
	Press Corps									0	3,562		0	0
	Senate			420						12,121	63,994	4,211	4,614	0
	Supreme Court									0	64	3,600	171	0
	Qwest Communications									0	0		0	169
	Services for the Blind									0	0		66	0
	MN Historical Society (House)									0	1,229		596	0
	MN Historical Society (PMD)									0	0		505	0
	Vacant (B-5)									0	0		0	0
	Vacant									0	1,862			
	SUBTOTALS	0	0	420	0	1,203	0	0	0	21,038	104,819	12,418	11,182	25,828

	TOTALS			
1	useable space	420	1,203	176,390
2	common space		272	128,980
	(PMD 1752 Off + 5368 Storage)			7,120
3	rentable space (1+2)	420	1,475	312,490
4	shafts	370	0	38,832
5	all interior SP (3+4)	790	1,475	351,322
6	outer building wall	361	340	26,521
7	Gross SQ FT (5+6)	1,151	1,815	377,843

The square footage numbers conatined herein are calculated form an automated system and are used for predsign purposes only.
The automated floor plans and square footages will not be utilized and "of record" until 7/1/2004.

Tenant	Existing SF (Usable)	Proposed SF (Usable) - estimates only		
	State Capitol	State Capitol	Expansion Space	Total Proposed SF
Attorney General	5,405	5,405	0	5,405
Cafeteria	5,745	5,745	0	5,745
Capitol Security	7,103	7,103	0	7,103
Capitol Security (PMD)	225	225	0	225
Ceremonial Space	19,914	22,711	0	22,711
Governor	10,158	16,294	0	16,294
House **	29,971	27,796	10,500	38,296
Press Corps	3,562	0	4,000	4,000
Senate *	84,940	74,219	60,000	134,219
Supreme Court	3,835	3,835	0	3,835
Qwest Communications	169	169	0	169
Services for the Blind ***	66	620	0	620
MN Historical Society	2,330	8,000	0	8,000

* The Senate is giving up 20,321 SF in the SOB and the House is gaining that space.

** The House is gaining back 600 SF in the Capitol that is currently used by the lobbyists.

*** Services for the Blind currently has 66 sq. ft. storage, vending space in basement corridor and a food bar in the second floor south corridor.

INTRODUCTION

The Capitol, as an existing historic structure, cannot and is not required to meet the current building codes. However, efforts should be made to improve the life safety, accessibility and other code deficiencies wherever possible. In order to accomplish this, the building was reviewed for compliance with the current building codes, including:

- The Uniform Building Code (UBC), 1997 edition
- The Minnesota State Building Code (MSBC), 1999 edition
- The Minnesota Accessibility Code (Chapter 1341 of the MSBC), April 1999 edition
- The NFPA 101 Life Safety Code, 1996 edition

This was then reviewed with Tate Halverson, the Senior Plan Examiner at the City of Saint Paul. The list of items that were agreed upon are included in the Project Description - Capitol Building Improvements - ADA and Building Code Improvements on page 27 of this report.

At the time that the design and construction work at the Capitol goes forward, the code review should be update to all codes that are current at the time.

INDEX TO APPENDIX F

Project: Minnesota State Capitol
Address: 75 Constitution Avenue
St. Paul, MN 55155

1. APPLICABLE CODES

Uniform Building Code (UBC)	1997 Edition
Minnesota State Building Code (MSBC)	1999 Edition
Minnesota Accessibility Code (Chapter 1341 of the MSBC)	April 1999 Edition
NFPA 101, Life Safety Code	1996 Edition

2. OCCUPANCY

OCCUPANCY GROUPS (UBC Section301-312, Table 3-A)	A-3	Assembly, meeting, dining spaces
	B	Offices
	S-1	Med. Hazard Storage
	S-2	Low Hazard Storage

MIXED OCCUPANCY RESTRICTIONS (UBC Section 302.3, Table 3-B)

A-3 to B	No Requirement
A-3 to S-1	No Requirement
A-3 to S-2	No Requirement
B to S-1	No Requirement
B to S-2	No Requirement
S-1 to S-2	One hour fire resistive separation (w/ one hour fire-protection rating at openings).

Note: a one hour separation is required between all A, B and S occupancies and rooms containing a boiler, central heating plant or hot water boiler. (See UBC Section 302.5)

3. CONSTRUCTION TYPE (UBC Table 6-A)

II-F.R. Construction is stone masonry, steel and concrete.

4. EXTERIOR WALL AND OPENING PROTECTION (UBC Table 5-A)

Fire resistance of:

Exterior bearing walls	4 hour / Non-Combustible
Exterior non-bearing walls	4 hour / Non-Combustible less than 5 feet
	2 hour / Non-Combustible less than 20 feet
	1 hour / Non-Combustible less than 40 feet
	no rating / Non-Combustible elsewhere
openings	not less than 5 feet
	protected less than 20 feet

5. FLOOR AREA

ALLOWABLE BUILDING AREA

Basic Allowable Floor Area By Occupancy Group (UBC table 5-B, Section 504.3)

29,900	S.F. x	12%	3,588	S.F.
39,900	S.F. x	47%	18,753	S.F.
39,900	S.F. x	11%	4,389	S.F.
59,900	S.F. x	30%	17,970	S.F.
		100%	44,700	S.F.

INCREASES IN ALLOWABLE FLOOR AREAS

When separation on (4) sides, ADD 100% of above (Section 505.1)

+	44,700	S.F.
SUBTOTAL	89,400	S.F

Full fire-extinguishing system (i.e.: sprinklers) throughout,
ADD 100% the subtotal above (Section 505.3)
*(Increase is taken although not all of the building is sprinklered)

+	89,400	S.F.
SUBTOTAL (maximum area on each floor)	178,800	S.F.

Buildings over one story, double subtotal above for (section 505 (b), (c))

+	178,800	S.F.
TOTAL ALLOWABLE BUILDING AREA	**357,600**	**S.F.**

EXISTING BUILDING AREA

Ground Floor	62,707	S.F.
First Floor	62,353	S.F.
Second Floor	61,303	S.F.
Third Floor	42,880	S.F.
Fourth Floor	2,698	S.F.
Total Existing Building Area	**231,941**	**S.F.**

6. HEIGHT AND NUMBER OF STORIES (Table 5-B)

Occupancy	Allowable Height
Group A3	12 stories
Group B	12 stories
Group S-1	12 stories
Group S-2	12 stories
Actual building height	**5 stories** (Ground, 1-4)

Note: 1. Allowable to add one story when building is fully sprinklered

7. FIRE RESISTIVE REQUIREMENTS (Table 6-A)

1.	Bearing Walls-Exterior	603.3.1	4 HOURS
2.	Bearing Walls-Interior		2 HOURS
3.	Nonbearing Walls-Exterior	603.3.1	4 HOURS
4.	Structural Frame	table 7-A	2 HOURS
5.	Partitions-Permanent		1 HOUR
6.	Shaft Enclosures		2 HOURS
7.	Floors & Floor-Ceilings		2 HOURS
8.	Roofs & Roof Ceilings	603.5	1 HOUR
9.	Exterior Doors and Windows	603.3.2	
		503.2 - Table 5A	not permitted < 5 feet, protected < 20 feet
10.	Stairway Construction	603.4	Concrete, iron, steel w/ hard, non-combustible materials as treads and risers

8. OCCUPANT LOAD (Table 10-A)

See attached sheet for a breakdown of occupancy and exit requirements.

9. EXITING REQUIREMENTS (Section 1003)

See attached sheet for a breakdown of occupancy and exit requirements.

Table 10-B Egress width per person served:

Stairs:	3" per person
All other egress components:	2" per person

Maximum distance to exit (exterior exit or exit enclosure) = 250 feet
+100 feet if in exit corridor

10. INTERIOR FINISHES (SECTION 804)

Max. allowable flame spread if fully sprinklered may be reduced one classification. Therefore, use Flame Spread Classification (__) for all occupancies.

11. ATRIUM (ROTUNDA) (UBC, Section 402)

SECTION 402.2	Smoke control system is required
SECTION 402.3, Exception 1	One-hour separation not required if only open to 3 floors Rotunda is open from first through third floors -3 floors
SECTION 402.3, 2nd paragraph	draft and smoke control still needed?
SECTION 402.5.3	stairways and ramps shall be enclosed
Exception 2	except stairs connecting the lowest two floors circular stair is open from ground to 3rd floor - 4 floors

12. MISCELLANEOUS NOTES

1. Code review assumes fully sprinklered system to be provided.
2. Code review assumes fire alarm system to be provided.
3. Elevators shall be shut down automatically when the fire alarm system is activated.

(Occupant load factors are from UBC table 10-A, minimum exit widths and minimum stair widths from UBC table10-B.)

Space Description			Occupancies: Area (sq. ft.)	x	Occupant Load Factor	=	# of Occupants	Exiting: Min. # of Exists	Min. Exist Width (inches)	Min Stair width (inches)	Comments
Basement											
	dining (A-3)										
		Rathskeller	2,167		15		144	2	28.9		
	subtotal		**2,167**				**144**		**28.9**		
	offices (B)										
	A	Capitol Security	8,088		100		81	2	16.2		
	B	media	3,146		100		31	2	6.3		
	C	outstate media	537		100		5	1	1.1		
	D	building engineer	181		100		2	1	0.4		
	E	Senate IS	1,724		100		17	1	3.4		
	F	MHS	976		100		10	1	2.0		
	G	Senate Media/ Gov	3,507		100		35	2	7.0		
	H	Senate Media Control	808		100		8	1	1.6		
	I	custodial offices	1,080		100		11	1	2.2		
	J	Kitchen	2,624		200		13		2.6		
	subtotal		**22,671**				**214**		**42.7**		
	mechanical (S-1)										
	A	NW electrical	2,368		0		0	1			electrical only
	B	NW mechanical	4,658		300		16	1	3.1		
	C	SW mech/ elect/ phone	4,375		300		15	1	2.9		
	D	S central elect.	578		300		2	1	0.4		
	E	NE electrical	2,328		0		0	1			electrical only
	F	NE mechanical	2,945		300		10	1	2.0		
	G	N central mech/ elect	8,530		300		28	1	5.7		
	H	NE mech / pump room	3,435		300		11	1	2.3		
	I	SW mech	4,502		300		15	1	3.0		
	subtotal		**33,719**				**82**		**16.3**		
	storage (S-2)										
	A	PMD	204		300		1	1	0.1		
	B	PMD	231		300		1	1	0.2		
	C	Senate	170		300		1	1	0.1		
	D	PMD	195		300		1	1	0.1		
	E	PMD	151		300		1	1	0.1		
	F	PMD	812		300		3	1	0.5		
	G	Supreme Court	160		300		1	1	0.1		
	H	PMD/ Senate	177		300		1	1	0.1		
	I	PMD - trash / recycling	935		300		3	1	0.6		
	J	Senate	298		300		1	1	0.2		
	K	House	245		300		1	1	0.2		

(Occupant load factors are from UBC table 10-A, minimum exit widths and minimum stair widths from UBC table10-B.)

Space Description			Occupancies						Exiting			
			Area (sq. ft.)	x	Occupant Load Factor	=	# of Occupants		Min. # of Exists	Min. Exist Width (inches)	Min Stair width (inches)	Comments
	L	MHS	438		300		1		1	0.3		
	M	House	534		300		2		1	0.4		
	N	PMD	480		300		2		1	0.3		
	O	House	4,783		300		16		1	3.2		
	P	PMD	491		300		2		1	0.3		
	Q	House	160		300		1		1	0.1		
	R	MHS	365		300		1		1	0.2		
	S	Governor	165		300		1		1	0.1		
	T	Senate	3,649		300		12		1	2.4		
	U	Senate	348		300		1		1	0.2		
	V	Senate	1,971		300		7		1	1.3		
	W	unassigned	270		300		1		1	0.2		
	X	Senate	845		300		3		1	0.6		
	Y	SSB / PMD	301		300		1		1	0.2		
	Z	Senate	170		300		1		1	0.1		
	AA	unassigned	1,789		300		6		1	1.2		
	BB	unassigned	143		300		0		1	0.1		
	subtotal		**9,486**				**32**					
	Total for basement		**65,876**				**327**		2	**65.4**	**98.1**	
									(4 existing)			
Ground Floor												
	assembly (A-3)											
		Senate hearing room G-15	2,958		15		197		2	39.4		
	subtotals		**2,958**				**197**			**39.4**		
	offices (B)											
	west wing											
		Senate offices (north)	4,811		100		48		2	9.6		
		Senate / Gov. offices (south)	4,574		100		46		2	9.1		
	north wing											
		Senate offices (west)	2,119		100		21		1	4.2		
		Senate offices (east)	2,119		100		21		1	4.2		
	East wing											
		Senate offices	11,756		100		118		2	23.5		
	subtotals		**25,379**				**254**			**50.8**		
	mechanical (S-1)											
		east mechanical	641		300		2		1	0.4		
	subtotals		**641**				**2**			**0.4**		
	Total for ground floor		**28,978**				**510**			**101.9**	**152.9**	

(Occupant load factors are from UBC table 10-A, minimum exit widths and minimum stair widths from UBC table10-B.)

Space Description	Occupancies: Area (sq. ft.)	x	Occupant Load Factor	=	# of Occupants		Exiting: Min. # of Exists	Min. Exist Width (inches)	Min Stair width (inches)	Comments
First Floor										
assembly (A-3)										
AG conference room	406		15		27		1	5.4		
Gov. reception room	1,217		15		81		2	16.2		
Senate hearing room 107	1,646		15		110		2	21.9		
Senate hearing room 112	1,646		15		110		2	21.9		
House hearing room 118	1,261		15		84		2	16.8		
Senate hearing room 123	1,974		15		132		2	26.3		
Senate hearing room 125	930		15		62		2	12.4		
Rotunda	3,133		15		209		2	41.8		
subtotals	**12,213**				**814**			**162.8**		
offices (B)										
west wing										
A.G. offices (north)	4,795		100		48		2	9.6		
Gov. offices (south)	3,728		100		37		2	7.5		
north wing										
Senate offices (west)	697		100		7		1	1.4		
Senate offices (east)	906		100		9		1	1.8		
East wing										
Senate offices	2,931		100		29		2	5.9		
	1,606		100		16		2	3.2		
	835		100		8		2	1.7		
subtotals	15,498				131		2	26.1		
Total for first floor	**27,711**				**945**			**189.0**	**283.4**	
Second Floor										
assembly (A-3)										
Senate Chamber	2,876		15		106	*	2	21.2		*76 seats, 450sf
Senate Retiring Room	899		15		60		2	12.0		
Senate Information Lobby	52		7		7		1	1.5		
House Chamber	3,793		7		172	*	2	34.4		*142 seats, 348sf
House Retiring Room	797		15		53		2	10.6		
House information lobby	116		7		17		1	3.3		
House Meeting Room 218	1,296		15		86		2	17.3		
Rotunda	1,974		15		132		2	26.3		
Supreme Court Gallery	566		15		46	*	2	9.2		* 46 at benches
Supreme Court Chamber	1,313		7		72	*	2	14.4		* 7 at dais, 970sf

(Occupant load factors are from UBC table 10-A, minimum exit widths and minimum stair widths from UBC table10-B.)

Space Description	Occupancies: Area (sq. ft.)	x	Occupant Load Factor	=	# of Occupants		Exiting: Min. # of Exists	Min. Exist Width (inches)	Min Stair width (inches)	Comments
Supreme Court Consultation	512		15		34		2	6.8		
subtotals	**14,194**				**785**			**157.0**		
offices (B)										
west wing										
Senate offices (north)	1,270		100		13		1	2.5		
	1,485		100		15		1	3.0		
Senate offices (south)	354		100		4		1	0.7		
	1,270		100		13		1	2.5		
	1,834		100		18		1	3.7		
north wing										
House offices (west)	683		100		7		1	1.4		
House offices (east)	1,255		100		13		1	2.5		
east wing										
House offices	991		100		10		1	2.0		
	390		100		4		1	0.8		
Senate offices	323		100		3		1	0.6		
	1,974		100		20		1	3.9		
	3,254		100		33		2	6.5		
Senate offices (mezzanine)	377		100		4		1	0.8		
subtotals	**15,460**				**155**			**30.9**		
Total for Second Floor	**29,654**				**940**			**188.0**	**281.9**	
Third Floor										
assembly (A-3)										
House (lobbyist room)	979		15		65		2	13.1		
House Meeting Room 319	1,665		15		111		2	22.2		
House Gallery	1,542		15		146	*	2	29.2		* 108 seats, 268sf
Senate Meeting Room	1,166		15		78		2	15.5		
Senate Training Room	697		15		46		2	9.3		
Senate Gallery (west)	899		15		60	*	2	12.0		* 60 seats
subtotals	**6,948**				**506**			**101.3**		
offices (B)										
west wing										
Senate offices (north)	354		100		4		1	0.7		
	1,270		100		13		1	2.5		
	1,630		100		16		1	3.3		
Senate offices (south)	354		100		4		1	0.7		
	1,270		100		13		1	2.5		
	1,566		100		16		1	3.1		

(Occupant load factors are from UBC table 10-A, minimum exit widths and minimum stair widths from UBC table10-B.)

Space Description	Occupancies: Area (sq. ft.)	x	Occupant Load Factor	=	# of Occupants		Exiting: Min. # of Exists	Min. Exist Width (inches)	Min Stair width (inches)	Comments
north wing										
House offices	1,116		100		11		1	2.2		
east wing										
House offices	390		100		4		1	0.8		
	1,202		100		12		1	2.4		
Senate offices	1,120		100		11		1	2.2		
	3,254		100		33		1	6.5		
subtotals	**13,526**				**135**			**27.1**		
storage (S-2)										
Senate/ House	406		300		1		1	0.3		
old Supreme Court gallery	184		300		1		1	0.1		
subtotals	**27,642**				**272**			**54.5**		
Totals for Third Floor	**34,590**				**779**			**155.8**	**233.7**	
Fourth Floor										
assembly (A-3)										
House Lounge	458		15		31		2	6.1		
House Lounge	457		15		30		2	6.1		
Senate Gallery (east)	505		15		83	*	2	16.6		* 83 seats
subtotals	**1,420**				**144**			**28.8**		
storage (S-2)										
Senate (old law library mezz.)	404		300		1		1	0.3		
subtotals	**404**				**1**			**0.3**		
Total for Fourth Floor	**1,824**				**288**			**57.6**	**86.4**	
Building Totals										
	area				% of bldg					
A-3	39,900				13%					
B	146,550				47%					
S-1	34,360				11%					
S-2	93,922				30%					
	314,732				**100%**					

Division or Area	Room Name	Location (room #)	Men			Women		Uni-sex			Status		Accessible?	Special Comments
			Toilet	Lav.	Urinal*	Toilet	Lav.	Toilet	Lav.	Urinal*	Public	Private		
BASEMENT														
Capitol Security	Toilet	B1-D						1	1			X	Y	
	Women's Locker	B1-L				2	2					X	N	
	Men's Locker	B1-T	1	2	1							X	N	
Cafeteria	Women	B24J				1	1				X		Y	
	Men	B24K	1	1	1						X		Y	
Kitchen	Toilet	B23L						1	1			X	Y	
Outstate Press	Toilet	B22A						1	1			X	N	
Janitor	Water Closet	B69H						1				X	N	Accessible only through janitor's closet in mechanical room
Maint. Locker Rooms	Men	B70C	1	1	1							X	N	
	Women	B70E				1	1					X	N	
General	Women	B26C				1	1					X	N	Locked/ unused area - used for cleaning supply storage
	Women	B49				2	2				X		Y	
	Men	B53	2	2	2						X		Y	
Existing fixtures			5	6	5	7	7	4	3	0				
Required Fixtures			7	5		7	5							
Total Fixtures**			(2)	1	5	0	2	4	3	0				
FLOOR TOTAL*			3	3		2	4							
GROUND FLOOR														
Offices	Toilet	13C						1	1	1		X	N	
	Toilet	24A						1	1			X	N	
General	Men	5	1	2	2						X		N	
	Women	16				5	4				X		Y	
	Women	36						1	1		X		Y	
Existing fixtures			1	2	2	5	4	3	3	1				
Required fixtures			7	5		7	5							
Total Fixtures**			(6)	(3)	2	(2)	(1)	3	3	1				

Division or Area	Room Name	Location (room #)	Men			Women		Uni-sex			Status		Accessible?	Special Comments
			Toilet	Lav.	Urinal*	Toilet	Lav.	Toilet	Lav.	Urinal*	Public	Private		
FLOOR TOTAL*			(3)	(2)		(1)	1							

Division or Area	Room Name	Location (room #)	Men			Women		Uni-sex			Status		Accessible?	Special Comments
			Toilet	Lav.	Urinal*	Toilet	Lav.	Toilet	Lav.	Urinal*	Public	Private		
FIRST FLOOR														
House	Unisex	119						2	1			X	N	Semi-public - accessible to Hearing Room 118 and offices - random storage
	Private Toilet	124A						1	1			X	N	
Governor	Men	128D	1	1								X	N	
	Women	129				2	1					X	N	
	Toilet	131A						1	1			X	N	Governor's private toilet
Attorney General	Toilet	103A						2	1	1		X	N	Water bottle storage
General	Women	110A				4	6				X		N	Slightly hidden from public view
	Men	117	4	4	8						X		Y	
Existing Fixtures			5	5	8	6	7	6	4	1				
Required Fixtures			9	6		9	6							
Total Fixtures**			(4)	(1)	8	(3)	1	6	4	1				
FLOOR TOTAL*			3	1		0	3							
SECOND FLOOR														
Offices	Unisex	216E						2	2			X	N	
	Men	217D	1		1							X	N	
	Unisex	221						2	2	2		X	N	
Supreme Court	Robing Room	219						2	2			X	N	Limited Access - Locked
	Robing Room	221						2	2			X	N	Limited Access - Locked
Senate	Men	202	2	2	2							X	N	
	Women	203A				2	2					X	Y	
House	Women	211D				2	2					X	Y	
	Men	211F	3	3	4							X	Y	
General	Unisex	213						1	1			X	Y	
	Women	215				3	3				X		Y	
Existing Fixtures			6	5	7	7	7	9	9	2				
Required Fixtures			11	7		15	7							

Division or Area	Room Name	Location (room #)	Men			Women		Uni-sex			Status		Accessible?	Special Comments
			Toilet	Lav.	Urinal*	Toilet	Lav.	Toilet	Lav.	Urinal*	Public	Private		
Total Fixtures**			(5)	(2)	7	(8)	0	9	9	2				
FLOOR TOTAL*			5	3		(4)	5							
THIRD FLOOR														
General	Women	312				2	2				X		N	
	Men	314A	4	2	7						X		N	
	Women	315A				2	2				X		Y	Unlocked - hidden from public view
Existing Fixtures			4	2	7	4	4	0	0	0				
Required Fixtures			11	7		15	7							
Total Fixtures**			(7)	(5)	7	(11)	(3)	0	0	0				
FLOOR TOTAL*			(2)	(5)		(11)	(3)							
FOURTH FLOOR														
Existing Fixtures			0	0	0	0	0	0	0	0				
Required Fixtures			2	2		2	2							
Total Fixtures**			(2)	(2)	0	(2)	(2)	0	0	0				
FLOOR TOTAL*			(2)	(2)		(2)	(2)							
Exsiting Total Count			21	20	29	29	29	22	19	4				
Required Total Count			47	32	0	55	32	0	0	0				
Total Fixtures**			(26)	(12)	29	(26)	(3)	22	19	4				
TOTAL COUNT*			4	(3)	0	(15)	7							

*Where urinals are provided, one water closet less than the number specified may be provided for each urinal installed, except the number of water closets in such cases

**Uni-sex facilities have been applied to both gender counts to help offset the difference in the total fixture counts.

USE: STOR-E
TYPE: S-2
FACTOR: 300
AREA: 151
OCCUP.: 1

USE: KITCHEN
TYPE: B
FACTOR: 200
AREA: 2,624
OCCUP.: 13

USE: STOR-D
TYPE: S-2
FACTOR: 300
AREA: 195
OCCUP.: 1

USE: OFFICE-C
TYPE: B
FACTOR: 100
AREA: 537
OCCUP.: 5

USE: STOR-C
TYPE: S-2
FACTOR: 300
AREA: 170
OCCUP.: 1

USE: OFFICE-E
TYPE: B
FACTOR: 100
AREA: 1,124
OCCUP.: 17

USE: DINING
TYPE: A-3
FACTOR: 15
AREA: 2,861
OCCUP.: 190

USE: MECH.-E
TYPE: n/a
FACTOR: 0
AREA: 2,328
OCCUP.: 0

USE: STOR-F
TYPE: S-2
FACTOR: 300
AREA: 812
OCCUP.: 3

USE: OFFICE-G
TYPE: B
FACTOR: 100
AREA: 3,507
OCCUP.: 35

USE: STOR-G
TYPE: S-2
FACTOR: 300
AREA: 160
OCCUP.: 10

USE: STOR-H
TYPE: S-2
FACTOR: 300
AREA: 177
OCCUP.: 10

USE: STOR-K
TYPE: S-2
FACTOR: 300
AREA: 245
OCCUP.: 1

USE: STOR-M
TYPE: S-2
FACTOR: 300
AREA: 534
OCCUP.: 2

USE: MECH.-A
TYPE: n/a
FACTOR: 0
AREA: 2,368
OCCUP.: 0

USE: STOR-A
TYPE: S-2
FACTOR: 300
AREA: 204
OCCUP.: 1

USE: STOR-B
TYPE: S-2
FACTOR: 300
AREA: 231
OCCUP.: 1

USE: OFFICE-A
TYPE: B
FACTOR: 100
AREA: 8,088
OCCUP.: 81

USE: MECH.-G
TYPE: S-1
FACTOR: 300
AREA: 8,530
OCCUP.: 32

USE: STOR-I
TYPE: S-2
FACTOR: 300
AREA: 935
OCCUP.: 10

USE: STOR-J
TYPE: S-2
FACTOR: 300
AREA: 298
OCCUP.: 1

USE: STOR-L
TYPE: S-2
FACTOR: 300
AREA: 438
OCCUP.: 1

USE: OFFICES
TYPE: B
FACTOR: 100
AREA: 1,080
OCCUP.: 11

USE: MECH.-B
TYPE: S-1
FACTOR: 300
AREA: 4,658
OCCUP.: 16

USE: MECH.-F
TYPE: S-1
FACTOR: 300
AREA: 2,945
OCCUP.: 10

USE: MECH.-H
TYPE: S-1
FACTOR: 300
AREA: 3,435
OCCUP.: 91

USE: MECH.
TYPE: S-1
FACTOR: 300
AREA: 4,373
OCCUP.: 17

USE: MECH.-I
TYPE: S-1
FACTOR: 300
AREA: 4,502
OCCUP.: 14

USE: STOR-O
TYPE: S-2
FACTOR: 300
AREA: 4,183
OCCUP.: 16

USE: MECH.
TYPE: S-1
FACTOR: 300
AREA: 143
OCCUP.: 1

USE: STOR-BB
TYPE: S-2
FACTOR: 300
AREA: 143
OCCUP.: 1

USE: STOR-AA
TYPE: S-2
FACTOR: 300
AREA: 1,183
OCCUP.: 6

USE: MECH.
TYPE: S-1
FACTOR: 300
AREA: 1,930
OCCUP.: 5

USE: STOR-Z
TYPE: S-2
FACTOR: 300
AREA: 170
OCCUP.: 1

USE: STOR-Y
TYPE: S-2
FACTOR: 300
AREA: 301
OCCUP.: 1

USE: STOR-X
TYPE: S-2
FACTOR: 300
AREA: 845
OCCUP.: 3

USE: OFFICE-B
TYPE: B
FACTOR: 300
AREA: 3,146
OCCUP.: 32

USE: STOR-W
TYPE: S-2
FACTOR: 300
AREA: 270
OCCUP.: 1

USE: OFFICE-H
TYPE: B
FACTOR: 100
AREA: 808
OCCUP.: 8

OPEN UP CORRIDOR AROUND ROTUNDA AREA

USE: MECH.-D
TYPE: S-1
FACTOR: 300
AREA: 578
OCCUP.: 2

USE: STOR-V
TYPE: S-2
FACTOR: 100
AREA: 1,971
OCCUP.: 7

USE: OFFICE-D
TYPE: B
FACTOR: 100
AREA: 181
OCCUP.: 2

USE: STOR-U
TYPE: S-2
FACTOR: 300
AREA: 348
OCCUP.: 2

USE: STOR-T
TYPE: S-2
FACTOR: 300
AREA: 3,649
OCCUP.: 12

USE: STOR-S
TYPE: S-2
FACTOR: 300
AREA: 165
OCCUP.: 1

USE: OFFICE-F
TYPE: B
FACTOR: 100
AREA: 976
OCCUP.: 10

USE: STOR-R
TYPE: A-2
FACTOR: 300
AREA: 365
OCCUP.: 1

USE: STOR-Q
TYPE: A-2
FACTOR: 300
AREA: 160
OCCUP.: 1

USE: STOR-P
TYPE: S-2
FACTOR: 300
AREA: 491
OCCUP.: 5

USE: STOR-N
TYPE: S-2
FACTOR: 300
AREA: 480
OCCUP.: 2

MILLER DUNWIDDIE
ARCHITECTURE / PRESERVATION

123 North Third St., Suite 104
Minneapolis, MN 55401-1657
tel 612.337.0000 fax 612.337.0031

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Date Signature:

Reg No: Name:

PROJECT:

MINNESOTA STATE CAPITOL
PREDESIGN STUDY
CODE ANALYSIS

St. Paul, Minnesota

REVISIONS:

Mark	Date	Description

COMM. NO.: MIN0002
DATE: 5/29/01
DRAWN: HYG
CHECKED: JST

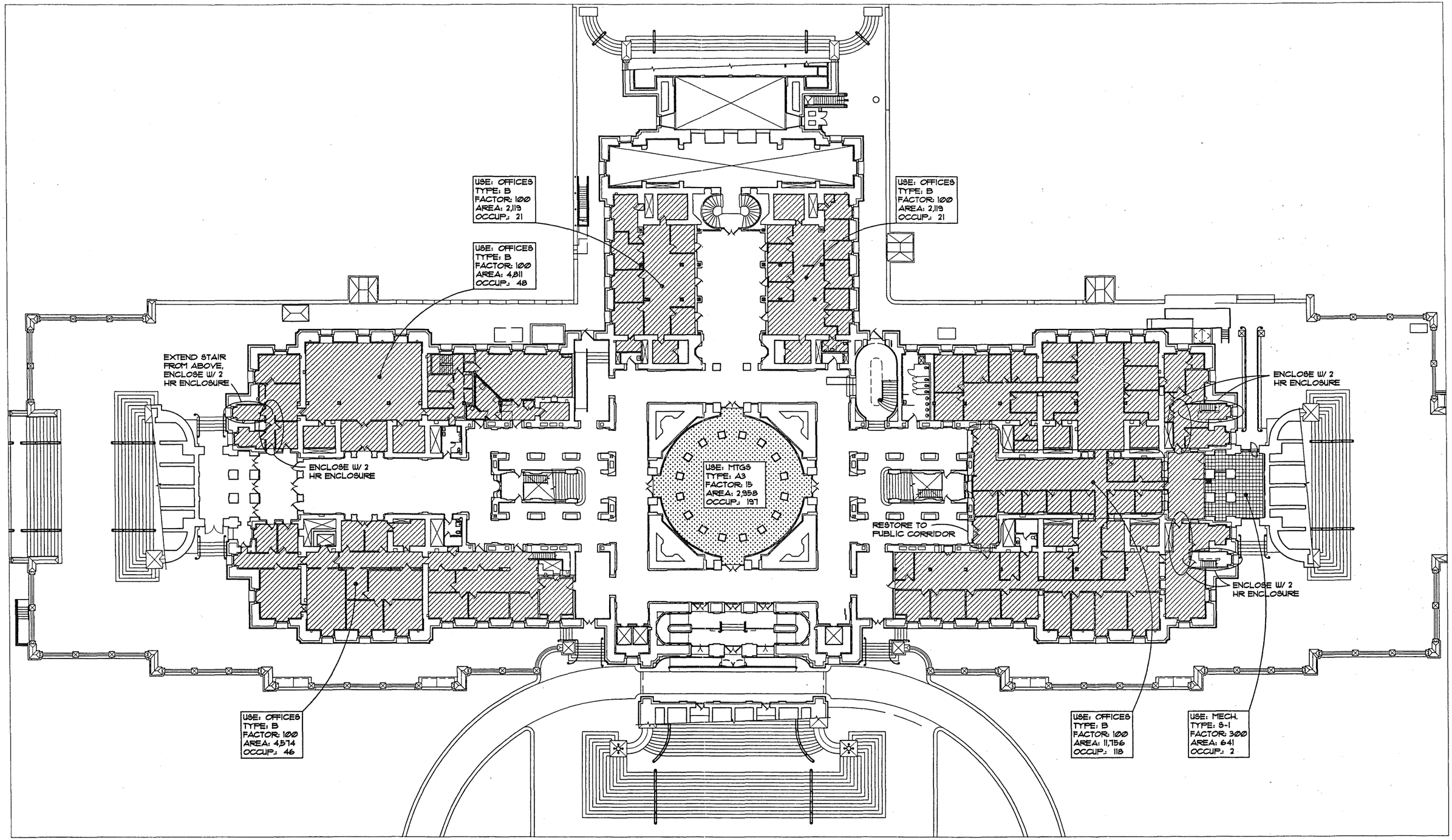
DRAWING TITLE:

BASEMENT
EXISTING OCCUPANCIES
SCALE: 1"=40'-0"

N

DRAWING NUMBER:

F - 17



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MINNESOTA STATE CAPITOL
PREDESIGN STUDY
CODE ANALYSIS

St. Paul, Minnesota

REVISIONS:

Mark	Date	Description

COMM. NO.: MIN0002
DATE: 05/29/01
DRAWN: HYG
CHECKED: JST

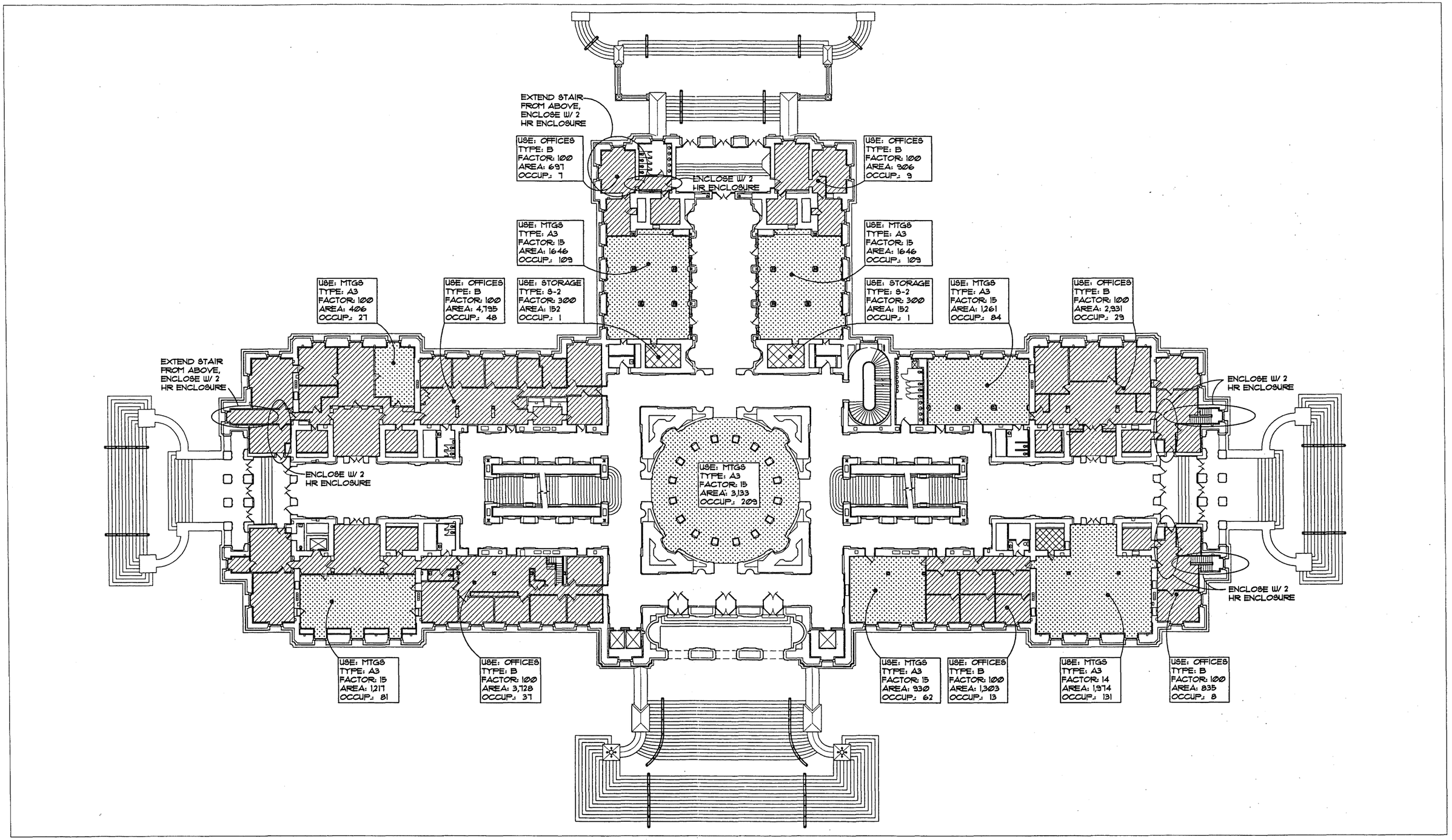
DRAWING TITLE:

GROUND FLOOR
EXISTING OCCUPANCIES
SCALE: 1"=40'-0"

N

DRAWING NUMBER:

F - 18



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MINNESOTA STATE CAPITOL
PREDESIGN STUDY
CODE ANALYSIS

St. Paul, Minnesota

REVISIONS:

Mark	Date	Description

COMM. NO.: MIN0002
DATE: 05/29/01
DRAWN: HYG
CHECKED: JST

DRAWING TITLE:

FIRST FLOOR
EXISTING OCCUPANCIES
SCALE: 1"=40'-0"

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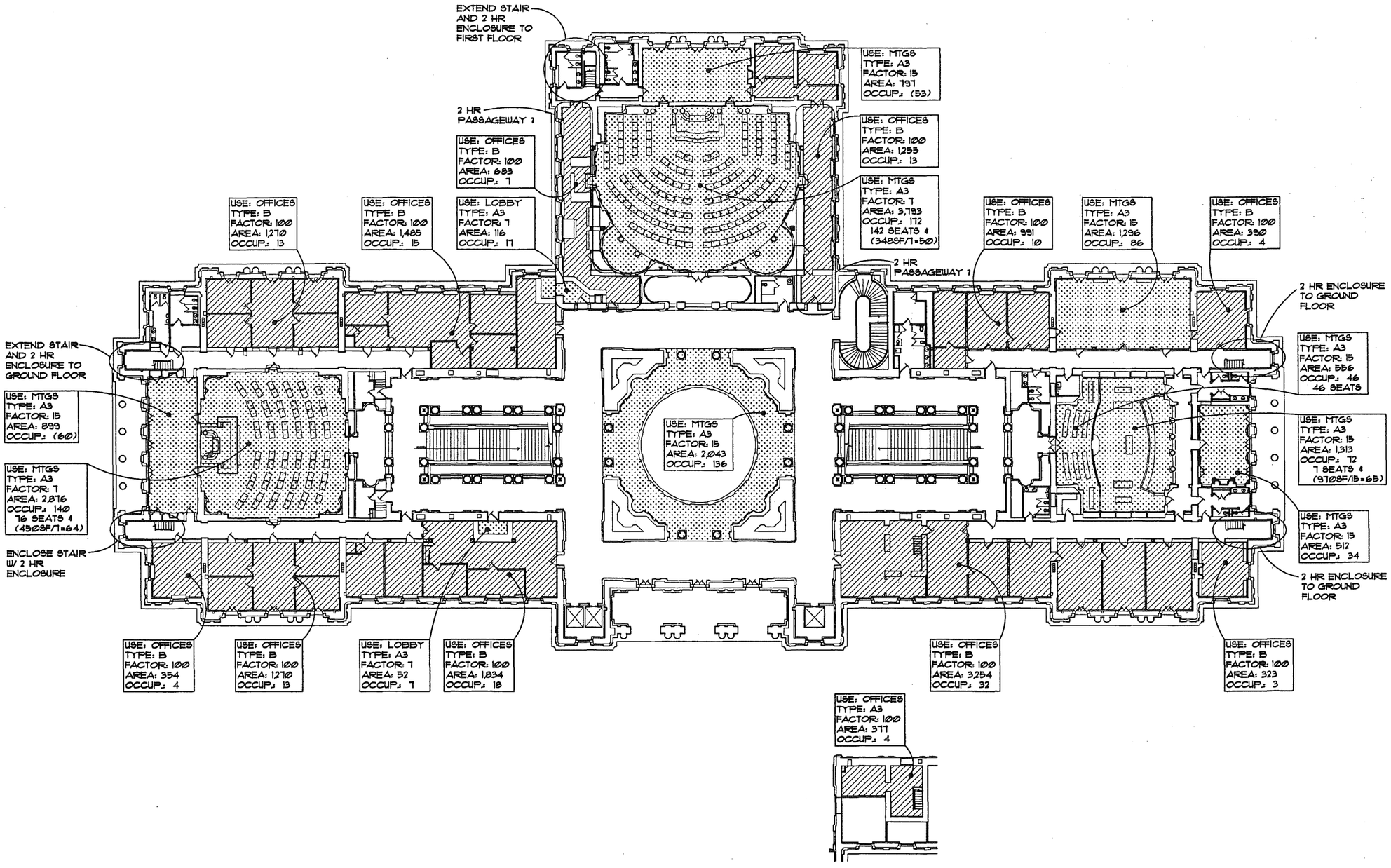
DRAWING NUMBER:

F - 19



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Date Signature:

Reg No: Name:

PROJECT:

MINNESOTA STATE CAPITOL
PREDESIGN STUDY
CODE ANALYSIS

St. Paul, Minnesota

REVISIONS:

Mark	Date	Description

COMM. NO.:	MIN0002
DATE:	05/29/01
DRAWN:	HYG
CHECKED:	JST

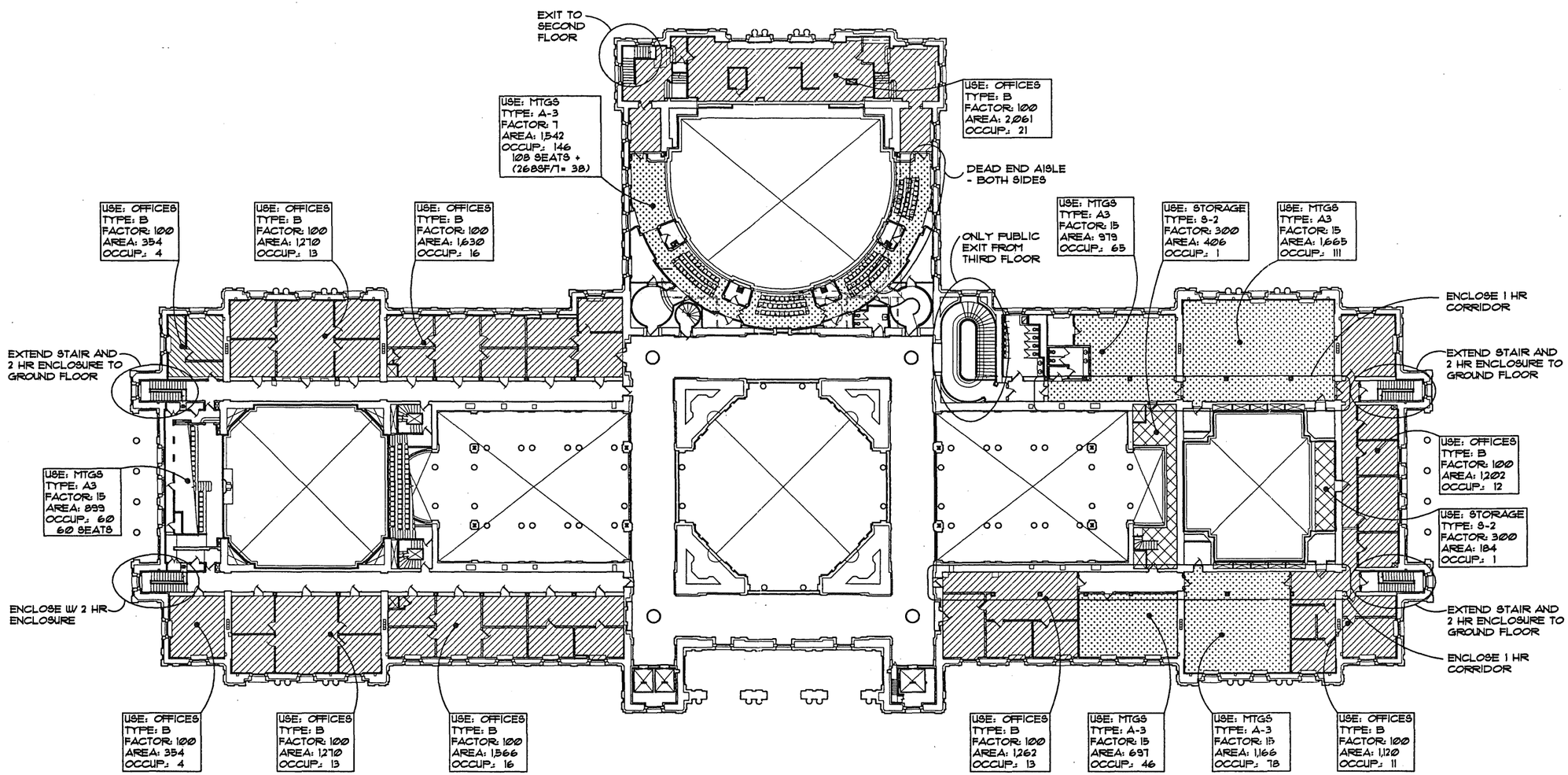
DRAWING TITLE:

SECOND FLOOR
EXISTING OCCUPANCIES
SCALE: 1"=40'-0"

N

DRAWING NUMBER:

F - 20



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Date Signature:

Reg No: Name:

PROJECT:

MINNESOTA STATE CAPITOL
PREDESIGN STUDY
CODE ANALYSIS

St. Paul, Minnesota

REVISIONS:

Mark	Date	Description

COMM. NO.:	MIN0002
DATE:	05/29/01
DRAWN:	HYG
CHECKED:	JST

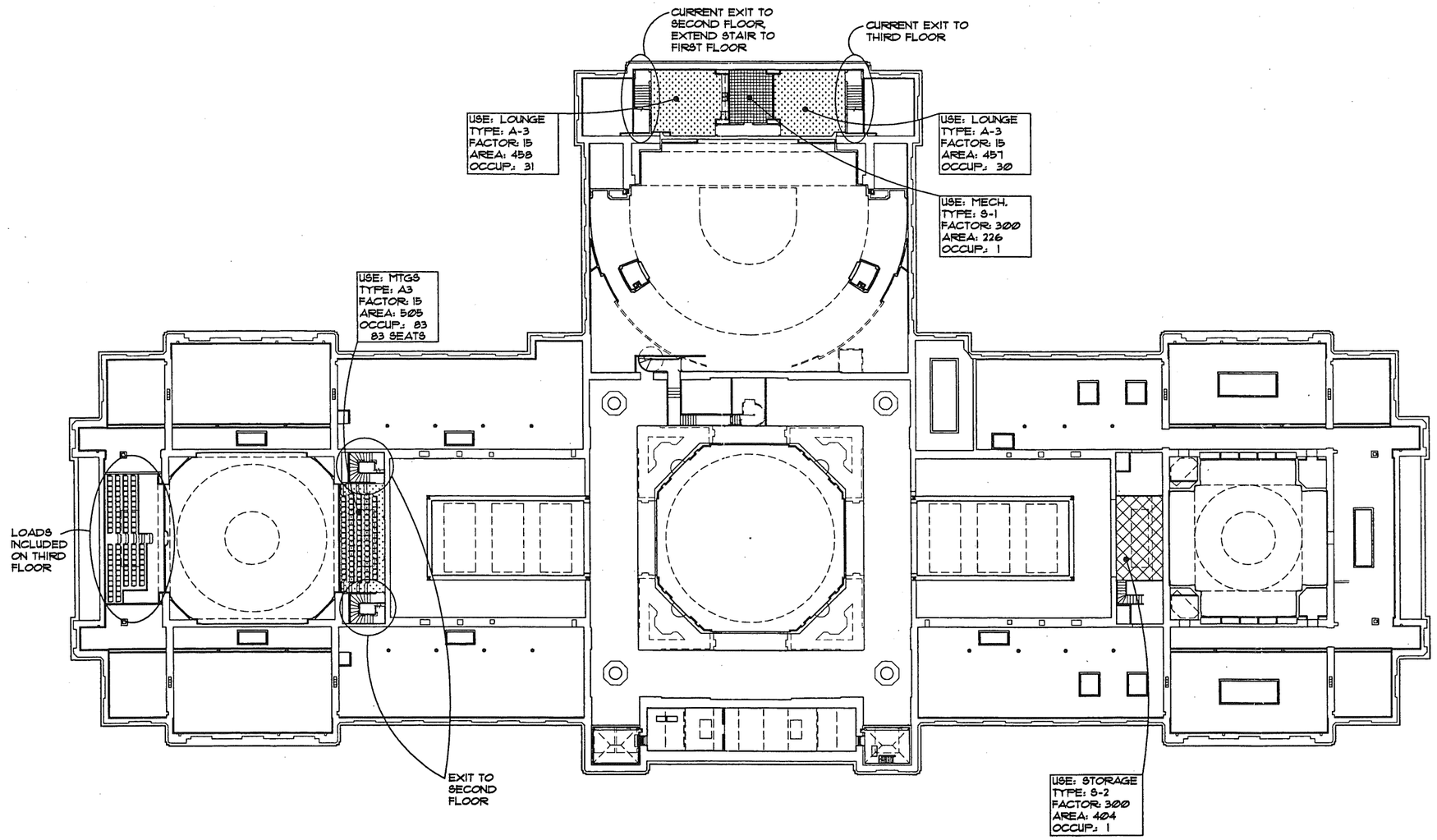
DRAWING TITLE:

3RD FLOOR
EXISTING OCCUPANCIES
SCALE: 1"=40'-0"

N

DRAWING NUMBER:

F - 21



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MINNESOTA STATE CAPITOL
PREDESIGN STUDY
CODE ANALYSIS

St. Paul, Minnesota

REVISIONS:

Mark	Date	Description

COMM. NO.:	MIN0002
DATE:	05/29/01
DRAWN:	HYG
CHECKED:	JST

DRAWING TITLE:

4TH FLOOR
EXISTING OCCUPANCIES
SCALE: 1"=40'-0"

N

DRAWING NUMBER:

F - 22

EXPANSION SPACE

Because the Capitol cannot accommodate the needs of the public and the tenants, expansion space needs to be provided outside of the Capitol building.

Criteria for Expansion Space

Primary Use

- The expansion space will accommodate the needs for Legislative public hearings, offices for Capitol tenant's support staff, and parking.

Adjacency

- The expansion space should be adjacent to the Capitol so that staff and legislators can easily get to and from the Capitol during the legislative floor sessions. A distance no greater than from the Capitol to the State Office Building appears to be an acceptable distance.

Tunnel Access

- The expansion space should be connected to the Capitol by the tunnel system.

Space Needed

- Approximately 91,200 square feet are needed for hearing rooms and 70,000 square feet for offices.
- In addition to the expansion space, swing space will need to be found for use during the Capitol construction. Approximately 50,000 square feet are needed for swing space.

Proposed Tenants

Public and Shared Spaces

- Shared Legislative hearing rooms
- Shared press conference room
- Press corps offices
- Lobbyist space
- Loading dock and service entrance

Underground Parking

- Legislature parking in a secured area.
- Staff parking in a secured area.
- Public accessible parking

Senate Support Offices

- Information Systems
- Sergeant at Arms
- Media Services

- Index
- Fiscal Services
- Publications
- Counsel and Research
- Fiscal Analysis
- Majority Research
- Minority Research

House Support Offices

- House TV
- Sergeant at Arms

Alternates

There are two possible alternates for expansion space:

- The first alternate is to use existing space with in the Capitol complex. This alternate is discussed on page G-3.

- The second alternate is to build a new facility on the Capitol Complex. This alternate is discussed on page G-5.

Expansion Space Predesign

A predesign study is needed to determine which of these alternates will be the best solution. This predesign will include life cycle cost analysis of the two alternates.

Swing Space

Swing space is needed for temporary offices during the Capitol construction. In alternate 1, the swing space will need to be found in an existing building near the Capitol. In alternate 2, the swing space could be in the new facility.

EXISTING SPACE

The first alternate for expansion space is to use existing space on the Capitol Complex. There is no vacant lease space on the Capitol Complex. Therefore, some Capitol Complex tenants would need to relocate elsewhere, to provide expansion space for the Capitol.

If this alternate is chosen, the use of space on the Capitol Complex will need to be carefully reviewed. The use of space on the Capitol Complex will need to be prioritized, based on the need to be located near the Capitol. The group(s) with the lowest adjacency requirement to the Capitol will be relocated off of the Capitol Complex.

Because the Capitol expansion space needs to be adjacent to the Capitol, there may be multiple "domino" moves. We have included the estimated time costs for one move. These will need to be multiplied by the number of moves involved.

Additional space will be to be remodeled for the tenants relocating off of the Capitol Complex. This will be approximately the same size as the expansion space – 161,200 square feet.

The order of construction and moves would be:

1. Determine which tenants of the Capitol Complex are relocating.
2. Find and secure lease space for Capitol Complex tenants.
3. Remodel space to fit the needs of the Capitol Complex tenants.
4. Move Capitol Complex tenants to the new lease space.
5. Remodel Capitol Complex space for Capitol expansion.
6. Move Capitol tenants to Capitol expansion space.

To see how this will relate to the Capitol Construction, see the schedule for Alternate 1 on page 14 of this report.

COSTS (2001 DOLLARS)*

Lease Space off of the Capitol Complex –
161,200 sq. ft.

Construction costs - $11,300,000 (based on $70/sq. ft.)

Lease Costs – Estimated at $22/sq. ft. (per Real Estate Management Division)

* Costs do not include any hazardous materials abatement (lead, asbestos, etc.).

Capitol Expansion Space –
91,200 sq. ft. hearing rooms, 70,000 sq. ft. offices
Construction Costs – $55,300,000 (based on $270/ sq. ft. for hearing rooms, $185/ sq. ft. for offices)
Lease Costs – would vary with building – see chart below.

Swing Space –
50,000 sq. ft.
Construction Costs - $6,000,000 (additional costs of remodeling the space between phases is included in the Capitol construction budget)
Lease Costs – would vary with building – see chart below.

Sample Lease Rates of State Buildings† (Fiscal Year 2002)	Per Square Foot/ Per Year
321 Grove St. – Bldg. 1	$10.83
321 Grove St. – Bldg. 2	$9.00
625 Robert St.	$13.00
635 Robert St.	$10.50
691 Robert St.	$10.63
Administration	$17.47
Capitol	$30.66
Centennial	$14.28
Ford – Office Space	$19.76
History Center	$21.59
Judicial Center	$23.91
Stassen	$17.05
State Office Building	$15.26
Transportation	$15.54
Veteran's Service	$15.48

† As issued by the Department of Administration by memorandum on September 20, 2000.

NEW FACILITY

Alternate 2 is to provide the expansion space in a new facility. In addition to serving as expansion space from the Capitol, this new facility could also provide expansion space for other Capitol Complex tenants. A predesign study of the current and future need for space on the Capitol Complex is needed to determine which additional groups could become tenants of the new facility. The size of the new facility will depend on the needs of these tenants, the needs of the tenants relocating from the Capitol, the CAAPB guidelines and the building code.

Site Criteria

Capitol Area Architectural and Planning Board Guidelines
The guidelines that will govern the location and size of the new facility are:

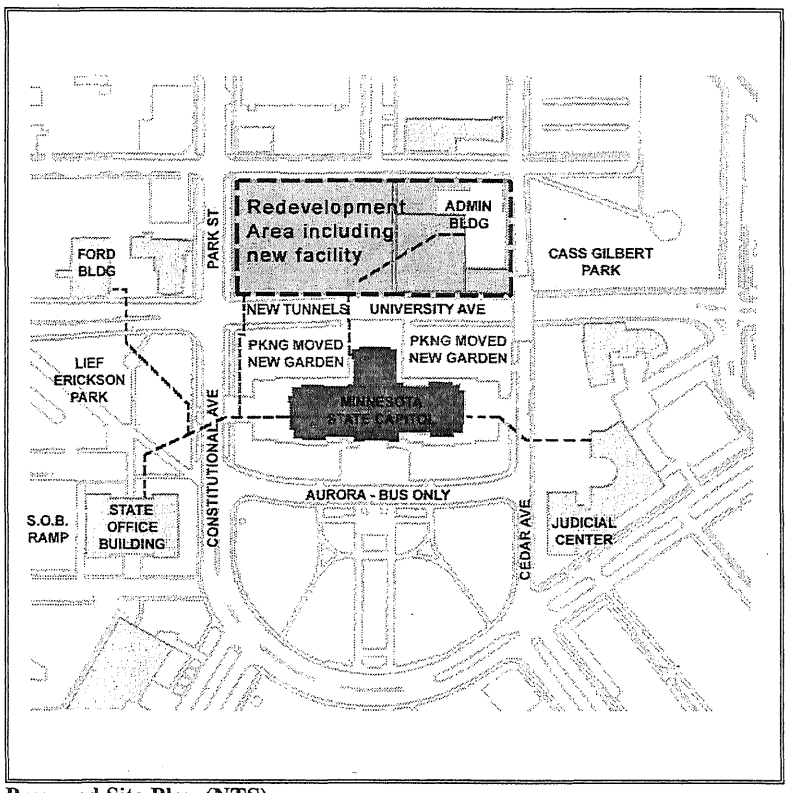
- *Comprehensive Plan for the Minnesota State Capitol Area.*
- *Specific Actions for the Implementation of the Comprehensive Plan for the Minnesota State Capitol Area*
- *Rules Governing Zoning and Design for the Minnesota State Capitol Area*

The *Comprehensive Plan for the Minnesota State Capitol Area* identifies potential development sites on the Capitol Complex. The lot to the northeast of the Capitol (currently parking lot 'B'), is the closest to the Capitol and, therefore, the most desirable location for the Capitol expansion space.

The administration ramp is near the end of its useful life and is expected to last about 5 more years.

The *Comprehensive Plan for the Minnesota State Capitol Area* also shows Capitol Boulevard as possible green space or garden development.

Based on these requirements, the entire two blocks north of the Capitol should be reviewed before and in conjunction with the design of the new facility.



Proposed Site Plan (NTS)

Architectural

Offices

The new facility should be a flexible, "state of the art" office building to accommodate the ever-changing needs of the office tenants. The relocating Capitol tenants need about 70,000 sq. ft. of office space. Additional office space may be needed, based on the needs of other building tenants.

Hearing Rooms

The public hearing rooms should likewise have "state of the art" design and technology, which allows for flexibility as needs and technology change. Approximately 91,200 sq. ft. are needed for the hearing rooms and supporting spaces.

Swing Space

The new facility will include swing space (about 50,000 sq. ft.) for temporary offices during the Capitol construction. After the Capitol construction, other Capitol Complex tenants will occupy this space.

Parking

- Parking will be provided underground, at the new building.
- Additional below grade parking could be provided under Capitol Boulevard and in the location of the current Administration Building Ramp.
- In addition to the parking required for the new facility,

parking will need to be provided to replace parking from:

- The Administration Building Ramp (265 spaces)
- Lot B (185 spaces)
- Lots N and O, north of Capitol (77 spaces)
- Aurora Avenue (86 spaces)

- The parking should be divided by levels or areas, into secure parking areas for legislators and staff, and for the accessible public spaces.
- Because of the demand and the location, the parking should be maximized.

Type of Construction

The facility should also be constructed of durable materials and design to last at least 75 years or more. Similar state office buildings have been constructed of poured-in-place concrete structures with stone veneers.

Tunnel Access

The new facility and parking should be connected to the Capitol by a multi-shaft tunnel. One shaft for public pedestrian traffic, and one shaft for utilities. Several tenants have also expressed a desire for a third, secured tunnel between these buildings.

The new building could also be connected to the tunnel system from the State Office Building or the Ford building. This would provide a more direct route from the State Office Building to the new facility.

Mechanical

- The source of cooling for the building will be chilled water from the Capitol Central Plant System. Chilled water piping will be routed into the building and chilled water pumps will be located in a pump room. The source of heating for the building will be St. Paul District Energy. Piping will be routed from District Energy mains into the building and heating water pumps will be located in a pump room. Primary/secondary heating water and chilled water loops will be created to serve the heating and cooling needs of the building. Secondary pumps shall be equipped with variable frequency drives in order to conserve energy.

- New air handling units will be located within the building. These units will have chilled water cooling coils and hot water heating coils. Exhaust fans will be provided as needed. Supply air, return air, and exhaust air ductwork will be routed throughout the building to serve the occupied areas. Supply and return fans shall be equipped with variable frequency drives and the air handling units shall have economizer capability in order to conserve energy. Code required minimum outside air volumes will be maintained at all times.

- Water, sanitary drain, and storm drain piping will be routed from city mains into the building. Plumbing piping will be routed throughout the building to serve all fixtures. The building will be fully sprinklered.

Electrical

- The new office building will connect to the existing Capitol Complex primary selective, 15 kV power distribution loop system. It will be supplied power through electrical rooms located underground or within the building that will house double-ended substations incorporating dry-type transformers.

- The building may have its own emergency power generator or it may be supplied emergency power from the new Heating/Cooling Plant generator, described elsewhere in this report.

- The building will utilize 277/480-volt power distribution systems with dry-type transformers that will have 120/208-volt output for receptacles power.

- The building will require its own main telephone utility service and will have fiber optic connections to other buildings in the Capitol Complex. There will be extensive connection to the Capitol Security Command Center in the State Capitol Building.

- There will be extensive lighting, dimming and control systems, which will be "state of the art" for a building of this type.

COSTS (2001 DOLLARS)*

New Facility Costs

Based on size needed for relocating Capitol tenants and for swing space.

Item	Area	Cost
General conditions	511,200 sq. ft.	$3,855,592
Site Work/ Tunnel Construction & Site Utilities	511,200 sq. ft.	$1,842,589
General Construction - Parking	300,000 sq. ft.	$7,500,000
General Construction – Office & Swing Space	120,000 sq. ft.	$9,100,000
General Construction – Hearing Rooms	91,200 sq. ft.	$18,240,000
Mechanical – Parking	300,000 sq. ft.	$875,000
Mechanical – Office & Hearing Rooms	211,200 sq. ft.	$6,914,000
Mechanical - Tunnel	5,500 sq. ft.	$187,000
Electrical – Parking	300,000 sq. ft.	$600,000
Electrical – Office & Hearing Rooms	211,200 sq. ft.	$3,040,560
Electrical – Tunnel	5,500 sq. ft.	$34,375
Communications/ Technology – Parking	300,000 sq. ft.	$600,000
Communications/ Technology – Office & Hearing Rooms	211,200 sq. ft.	$3,040,560
Communications/ Technology – Tunnel	5,500 sq. ft.	$34,375
10% Contractor Markups	511,200 sq. ft.	$5,939,405
15% Contingency	511,200 sq. ft.	$8,909,108
10% Architectural/Engineering Fees	511,200 sq. ft.	$6,533,346
Total		**$80,775,910**

* Costs do not include any hazardous materials abatement (lead, asbestos, etc.).

Capitol Area Architectural and Planning Board
204 Administration Building
50 Sherburne Avenue
Saint Paul, Minnesota 55155
Phone: 651.296.7138
Fax: 651.296.6718
TTY: 800.627.3529

January 30, 2002

TO: Senator Dennis Frederickson

FROM: Nancy Stark
Executive Secretary

RE: **MINNESOTA STATE CAPITOL PREDESIGN STUDY**

With all final edits incorporated, and reprints made, the Capitol Area Architectural and Planning Board (CAAPB) and the Administration Department is pleased to present you with this copy of the *Minnesota State Capitol Predesign Study.*

It represents the most thorough, comprehensive work incorporating input from all users of the State Capitol for the first time ever. We hope it will serve us for years to come as a guide for bringing our premier state building into the twenty-first century, and its second century of service to the people of Minnesota.

This document is serving as the basis for our current top-ranked Capital Budget Request for Interior Renovation Design of Minnesota's State Capitol, which we have attached for your convenience. Our request, which covers all design work for just over $2.1 million, is critical if we are to do any work other than cosmetic to prepare the Capitol Building for its 100th birthday and the next 100 years and beyond. The Governor has now created a Capitol 2005 Commission that includes legislators to help plan the Centennial Celebration and raise funds for future renovation work on the building. However, he did not support the above-mentioned request, lending his support instead to our second request for Restoration of Public Spaces on floors G through 2 and historic elevators in preparation for 2005.

Without a completed design for the full restoration and renovation of the building, we will not be able to do any additional work other than cosmetic. Also, without a completed design, it will be impossible to analyze which projects can proceed with or without tails, to accurately project how to make the necessary improvements to the mechanical and electrical systems of the building that are seriously outdated. In addition, without a completed design, it will be impossible to plan the necessary phasing, relocation costing, or in any way responsibly continue to work the Capitol Building so that it adequately serves the needs of the public, both in available space for the public to interact with government, or to provide government with technology to function efficiently.

Many states have already been where we are today and found the political will and dedication necessary to fund not only design, but also complete restoration efforts at more than two or three times the maximum cost anticipated for our buildings' full restoration. To say "NO" or even delay work now on our Capitol Building will only lead to millions of additional dollars and ever-increasing inconveniences caused by systems failures.

In this light, we hope you'll have an opportunity to examine the *Predesign Study*, and we welcome any questions. It is our belief, and that of the many who participated in the eighteen month long *Predesign Study*, that you will find that funds spent now on our jewel of a State Capitol is an investment we cannot fail to support as wise stewards of the "People's Building".

Attachment

\p\predesign study-mailing-mstr-02-jan29

2002 STATE APPROPRIATION REQUEST: $2,111,000

AGENCY PROJECT PRIORITY: 1 of 3

PROJECT LOCATION: Capitol Area - Saint Paul

PROJECT DESCRIPTION AND RATIONALE:

This request would fund all schematic design and design development work for the phased renovation and restoration of the Capitol Building's interior, including the basement, all ceremonial and public spaces, numerous office suites, and spaces currently serving as hearing rooms. The major part of this work would mean new, more efficient and effective mechanical and electrical systems, as well as comprehensive, updated fire and life safety systems. All work would be phased one wing at a time, with the north wing and rotunda space incorporated into the same phase.

This design work is seen as the logical next step following the completed "2001 Capitol Interior Predesign Study."

The "2001 Capitol Interior Predesign Study" identifies deficiencies and future needs of the building, its tenants, and its service to the public, including its one million visitors each year. The condition of the building's infrastructure, code compliance, and adaptability to increased technology demands is extremely critical. The following are the Capitol's critical deficiencies:

- Building Code and Accessibility Needs

  The signage throughout the building does not meet the Americans with Disabilities Act (ADA) Accessibility Guidelines or the Minnesota State Building Code.

  The emergency exiting from the building does not meet the exiting requirements of the building code. The areas with the worst exiting problems are the third and fourth floor of the north wing and the ground floor and third floor of the east wing.

  The east wing lacks fire sprinkler and smoke detection systems per code.

- HVAC and Plumbing Needs

  The HVAC systems do not provide the required number of fresh air exchanges. Many of the existing mechanical units are near the end of their useful life. Thus, balancing of air for heating, cooling, and humidity control is inconsistent throughout the building.

  The number of toilet fixtures is far below the number required by the state building code.

- Electrical Needs

  The main electrical service to the building cannot meet the increasing electrical demands of the building. The main electrical transformers for the building are near the end of their useful life and are scheduled for replacement in the fall of 2001. The main panels for the building also need to be replaced. The electrical distribution system does not meet the needs of the building users (for examples: not enough outlets for computers and other equipment, power is unavailable in some areas).

  Lighting and dimming systems have exceeded their life expectancy of 20 to 25 years. The components are failing at a rate and cost that is prohibitive when compared to the cost of a system replacement.

- Building Technology Needs

  The cabling and technology backbone of the building is not adequate to keep up with changing technology requirements. There are many abandoned data, cable and phone lines in the building, which need to be removed.

The Capitol Building cannot meet all of the needs of the building tenants and visitors. The two main areas in which the building is insufficient are the hearing rooms, including their technical capabilities, and the lack of expansion space. The current information desk is not ADA accessible. Tenants are working in teams and are experiencing an increase in the number of public visitors. Additionally, office spaces lack meeting rooms.

As a result of the predesign, during the course of restoration tenants may be temporarily or permanently relocated. The public will experience some inconvenience. The design will address how to accomplish this restoration efficiently and with minimal disruption. It is anticipated that cost and time efficiencies are achieved by restoring a total wing of the Capitol one at a time. Other states have proven this sequencing the most effective in restoring their Capitols.

Restoration of the Capitol Building has been a top priority of the CAAPB since the mid-1980s, but funding has been sporadic. This design work will identify all construction projects necessary for interior renovation of the Capitol Building, and by the sequencing of these projects, serve as the basis for CAAPB capital budget requests in 2004 and beyond.

The design work will also provide direction for Capitol 2005, the result of an executive order to establish a commission to plan and fundraise for both the Capitol's Centennial as well as funding for future capital improvements. It is hoped the private funding efforts of the commission will directly reduce the dependence on state funding for future capital budget requests.

Minnesota is not alone in need of restoration to its magnificent, nearly 100-year-old building. Nebraska, Wisconsin, Texas, Iowa, Ohio, and others have all made sizeable commitments with multimillion-dollar projects underway.

This request would also fund an interior maintenance manual similar to the exterior maintenance manual completed in 1996 for the Capitol Building.

Appropriations for this project should be made to the Capitol Area Architectural and Planning Board.

IMPACT ON STATE AGENCY OPERATING BUDGETS (FACILITIES NOTE):

Once new systems are operational after construction and renovation, cost savings are anticipated, though difficult to quantify, given lack of some final details in program. In the interim, relocation of occupants wing-by-wing will result in new expenses and some transitional costs to be determined as the design identifies logical, sequential phasing for the total project.

OTHER CONSIDERATIONS:

Recently, in several states, the restoration and renovation of their Capitol Building has taken on a much stronger commitment with support from legislators and governors. States such as Wisconsin, Texas, and Ohio have taken a comprehensive approach to their Capitol's restorations by closing down entire wings or even the buildings themselves. Occupants were relocated for short periods of time to allow for concentrated, efficient, and economical efforts on the needs of these buildings being restored, and that the tenants could maintain work efficiencies and minimal disruption.

After design work is completed in preparation for the 2004 bonding session, the state must make several longer-term decisions. One option would call for renovation of existing space in the Capitol Complex, such as the Centennial Building, to make way for relocation of Senate offices and/or uses such as hearing rooms and those offices directly affiliated with the public on either a temporary or permanent basis. That will then permit restoration of the Capitol to proceed one wing at a time in order to maximize budget efficiencies and minimize inconveniences. The other option would call for a delay of most of the Capitol Building work while a new Capitol annex is built to house both swing space and permanent relocation space for units from the Capitol Building pursuant to the predesign.

PROJECT CONTACT PERSON, TITLE, ADDRESS, PHONE, FAX, AND E-MAIL:

Paul Mandell, Principal Planner, CAAPB
204 Administration Building
20 Sherburne Avenue
Saint Paul, MN 55155
Phone: (651) 296-6719
Fax: (651) 296-6718
E-mail: Paul.Mandell@state.mn.us

Capitol Area Architectural Planning Bd
Capitol Building: Interior Renovation Design

AGENCY CAPITAL BUDGET REQUEST
Fiscal Years 2002-2007
Dollars in Thousands ($137,500 = $138)

Project Cost

TOTAL PROJECT COSTS All Years and All Funding Sources	Project Costs All Prior Years	Project Costs FY 2002-03	Project Costs FY 2004-05	Project Costs FY 2006-07	Project Costs All Years	Project Start (Month/Year)	Project Finish (Month/Year)
1. Property Acquisition							
Land, Land Easements, Options	$0	$0	$0	$0	$0		
Land and Buildings	0	0	0	0	0		
2. Predesign Fees	300	0	0	0	300	07/2000	07/2001
3. Design Fees							
Schematic	385	840	0	0	1,225	07/2002	12/2002
Design Development	513	1,122	0	0	1,635	01/2003	10/2003
Contract Documents	1,026	0	1,200	1,300	3,526	08/2004	03/2006
Construction Administration	642	0	500	600	1,742	02/2005	10/2010
4. Project Management							
State Staff Project Management	0	0	0	0	0		
Non-State Project Management	0	0	0	0	0		
Commissioning	0	0	0	0	0		
Other Costs	0	0	0	0	0		
5. Construction Costs						06/2006	10/2010
Site & Building Preparation	0	0	0	0	0		
Demolition/Decommissioning	0	0	2,500	1,800	4,300		
Construction	20,347	0	16,500	23,700	60,547		
Infrastructure/Roads/Utilities	0	0	0	0	0		
Hazardous Material Abatement	0	0	0	0	0		
Construction Contingency	2,000	0	1,000	1,000	4,000		
Other Costs	0	0	0	0	0		
6. One Percent for Art	0	0	0	0	0		
7. Relocation Expenses	0	0	0	0	0		
8. Occupancy							
Furniture, Fixtures and Equipment	750	0	0	0	750		
Telecommunications (voice & data)	0	0	0	0	0		
Security Equipment	0	0	0	0	0		
Other Costs	0	0	0	0	0		
SUBTOTAL: (items 1 – 8)	25,963	1,962	21,700	28,400	78,025		
9. Inflation							
Midpoint of Construction		05/2003	05/2005	09/2007			
Inflation Multiplier		7.60%	16.50%	27.90%			
Inflation Cost		149	3,581	7,924	11,654		
GRAND TOTAL	$25,963	$2,111	$25,281	$36,324	$89,679		

CAPITAL FUNDING SOURCES	Prior Years	FY 2002-03	FY 2004-05	FY 2006-07	TOTAL
State Funds :					
G.O Bonds/State Bldgs	25,963	2,111	25,281	36,324	89,679
State Funds Subtotal	25,963	2,111	25,281	36,324	89,679
Agency Operating Budget Funds	0	0	0	0	0
Federal Funds	0	0	0	0	0
Local Government Funds	0	0	0	0	0
Private Funds	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	**25,963**	**2,111**	**25,281**	**36,324**	**89,679**

CHANGES IN STATE OPERATING COSTS	Changes in State Operating Costs (Without Inflation)			
	FY 2002-03	FY 2004-05	FY 2006-07	FY 2008-09
Compensation -- Program and Building Operation	0	0	0	0
Other Program Related Expenses	0	0	0	0
Building Operating Expenses	0	0	0	0
Building Repair and Replacement Expenses	0	0	0	0
State-Owned Lease Expenses	0	0	0	0
Nonstate-Owned Lease Expenses	0	0	0	0
Expenditure Subtotal	0	0	0	0
Revenue Offsets	0	0	0	0
TOTAL CHANGES	0	0	0	0
Change in F.T.E. Personnel	0.0	0.0	0.0	0.0

PREVIOUS STATE CAPITAL APPROPRIATIONS FOR THIS PROJECT (Legal Citations) Laws of Minnesota (year), Chapter, Section, Subdivision	Amount
1998, Ch 404, Sec 14, Subd 2 & 3 and 2000, Ch 492, Sec 12, Subd 10	8,250
1997, Ch 446, Sec 29, and 1996, Ch 463, Sec 13, Subd $ & 5	9,935
1995 Spec Session, Ch 2, Subd 3, and 1994, Ch 643, Sec 3, Subd 2 & 3	7,778
TOTAL	**25,963**

SOURCE OF FUNDS FOR DEBT SERVICE PAYMENTS (for bond-financed projects only)	Amount	Percent of Total
General Fund	2,111	100.0%
User Financing	0	0.0%

STATUTORY AND OTHER REQUIREMENTS

Project applicants should be aware that the following requirements will apply to their projects after adoption of the bonding bill.

Yes	MS 16B.335 (1a): Construction/Major Remodeling Review (by Legislature)
No	MS 16B.335 (1b): Project Exempt From This Review (by Legislature)
No	MS 16B.335 (2): Other Projects (require legislative notification)
Yes	MS 16B.335 (3): Predesign Review Required (by Administration Dept)
Yes	MS 16B.335 (4): Energy Conservation Requirements
Yes	MS 16B.335 (5): Information Technology Review (by Office of Technology)
Yes	MS 16A.695: Public Ownership Required (as per Finance Dept.)
No	MS 16A.695: Use Agreement Required (as per Finance Dept)
No	MS 16A.695: Program Funding Review Required (by granting agency)
No	Matching Funds Required (as per agency request)
Yes	Project Cancellation in 2007 (as per Finance Dept)

Department of Administration Analysis:

The request does not clearly articulate the phasing of the work as to how it will accommodate moves and alternative space requirements. In addition there is not a clear understanding of how this project relates to the Capitol 2005 scope of work and private funding. It is recommended that the funds be appropriated to Admin with the CAAPB serving as advisors.

Department of Finance Analysis:

This project requests funding for design and schematics in the first biennium with construction and renovation in later biennia. The latter phases would require renovation to be completed in sections during which employees officed in the Capitol would be temporarily relocated. While details on the site(s) and costs of these relocations are not yet known, those costs may be substantial.

Governor's Recommendation:

The Governor does not recommend capital funding for this request.

STATEWIDE STRATEGIC SCORE		
Criteria	**Values**	**Points**
Critical Life Safety Emergency - Existing Hazards	0/700	0
Critical Legal Liability - Existing Liability	0/700	0
Prior Binding Commitment	0/700	0
Strategic Linkage - Agency Six Year Plan	0/40/80/120	80
Safety/Code Concerns	0/35/70/105	35
Customer Service/Statewide Significance	0/35/70/105	70
Agency Priority	0/25/50/75/100	100
User and Non-State Financing	0-100	0
State Asset Management	0/20/40/60	40
State Operating Savings or Operating Efficiencies	0/20/40/60	0
Contained in State Six-Year Planning Estimates	0/25/50	25
Total	700 Maximum	350