

21st Century Office

U.S. House of Representatives Capitol DAT



Quality of Life
New Ways of Working
Within the Footprint
Investment Strategies
Leadership Opportunities

About the AIA –

The American Institute of Architects

Since 1857, the AIA has represented the professional interests of America's architects. As AIA members, more than 83,000 licensed architects, emerging professionals, and allied partners express their commitment to excellence in design and livability in our nation's buildings and communities. Members adhere to a code of ethics and professional conduct that assures the client, the public, and colleagues of an AIA-member architect's dedication to the highest standards in professional practice.

The American Institute of Architects
1735 New York Ave., NW
Washington, DC 20006-5292
Ph 800-AIA-3837 or 202-626-7300

Executive Summary

Everyone can do “more with more,” but doing more within the existing context of the House Capitol Complex is critical to the long term mission of the U.S. House of Representatives.

- Doing more for members in their service to our country.
- Doing more for a growing staff who serve both the Members and the overall public realm.
- Doing more by creating an innovative, productive, and healthy environment for all stakeholders and the public.
- Doing more within the existing physical boundaries of the House Complex Buildings and grounds.

That is the vision of the AIA in providing a Design Assistance Team to this important study.

The purpose of the U.S. House of Representatives Capitol Complex Design Assessment Team (Capitol DAT) was to observe current conditions, to explore the opportunities, and to make recommendations to the Chief Administrative Officer (CAO) on ways to make improvements. Areas of focus included public and employee circulation, improving the sense of place within the complex while improving worker productivity, evolving Capitol Hill as a 21st century workplace, and as an outcome of these actions, improving the overall sustainability of the Cannon, Rayburn, and Longworth House Office Buildings on Capitol Hill.

Preparation for the DAT began in late 2007 and early 2008, with initial interviews with key stakeholders, and a complete review of previous and on-going studies undertaken by both the House Chief Administrative Officer (CAO) and the Architect of the Capitol (AOC).

The April 2008 Capitol DAT charrette spanned a four day period and utilized a combination of existing background documents, face to face interviews, and a series of steering committee meetings, open houses, and a final presentation.

“We need to think of this as a village for 8,000 people.”

- Rep. Earl Blumenauer, D-OR

Acknowledgements

A diverse group of multi-disciplinary experts, in conjunction with the American Institute of Architects, contributed to this charrette.

Charette Participants Volunteer Team

Team Leader

Norman Strong, FAIA - Miller Hull

Historic Resources Architect

Martha Werenfels, AIA, LEED AP - Durkee, Brown, Vivieros & Werenfels

Sustainable Design Architect

Bob Berkebille, FAIA - BNIM

Lighting Design Expert

Kevin Flynn, AIA, IES - Kiku Obata & Company

Sustainable Design Engineer

Kevin Hydes, P.E., LEED AP - Stantec

Work Place Design Expert

Stephanie Douglass, LEED AP - DEGW

Resource Team

Project Lead

David Downey, CAE, Assoc. AIA

Studio Coordination

Joel Mills

Research

Jessyca Schwarzkopf, AIA
Kelly Pickard

Publishing

Allie Chamberain

Publication Design

Rachel Freedman

EXECUTIVE SUMMARY (cont.)

The outcome of this Capitol Design Assistance Team (DAT) charrette is a series of recommendations that support the Capitol DAT vision. Further consideration, study, and action by others.



Quality of Life

OBSERVATIONS

Disconnect exists between staff/space decisions and quality of life.

Missed opportunities for exponential increases in efficiency and reductions in cost by operating 435 separate entities.

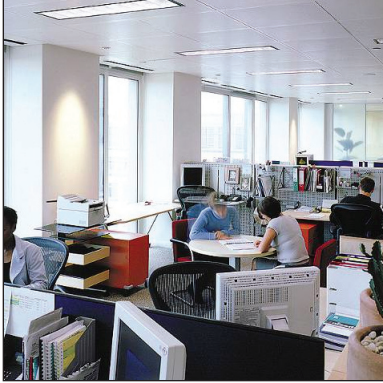
Outdated systems are taxing human and financial resources.

RECOMMENDATIONS

Connect incremental decisions with health and productivity outcomes.

Integrated management into one operating system for significant advantages in IT, communication, health and productivity.

State of the art management practices and systems will transform quality of life, productivity and operating costs.



New Ways of Working

Member suites are currently at capacity within the context of their current use.

Outdated processes and policy inefficiencies have resulted in poor working conditions.

Inefficiency and lack of sustainability characterize current policies of space use and allocation.

Rethink office usage at both physical and procedural levels.

Improve opportunities for better use of space through increased integration of technology and centralization of shared meeting and resource spaces.

Rework Member suite layouts to utilize space more effectively and efficiently.



Within the Footprint

Courtyards in each building have lost their sense of place and function.

Access between the buildings is inefficient, unpleasant and unhealthy.

Roofs have become the domain of mechanical equipment.

Green the courtyards and make them accessible and secure.

Secure the streets between the buildings to create an enlivened exterior pedestrian zone.

Utilize rooftops for people and green technologies.

EXECUTIVE SUMMARY (cont.)

	OBSERVATIONS	RECOMMENDATIONS
Investment Strategies	<p>Renovation cycle for the Cannon, Longworth and Rayburn House Office Buildings is currently 20 years.</p> <p>Deferred maintenance of the buildings is reaching \$3.2 billion</p> <p>Coordinated strategies for long term sustainability are not part of the current system.</p>	<p>Accelerate the investment cycle for the House Office Buildings to achieve greater financial and energy savings.</p> <p>Comprehensive planning shall guide improvements and bridge beyond the current leadership.</p> <p>Invest in building prototype 21st century member suite in Cannon, Longworth, and Rayburn.</p>
Leadership Opportunities	<p>Disconnect between ongoing projects, capital improvements, and Greening of the Capitol.</p> <p>Deferred maintenance, especially in energy efficiency and envelope upgrades.</p> <p>Outdated workspaces and systems do not reflect the stature, importance and effectiveness of the institution.</p>	<p>Integrate budgets, scope, and schedules to achieve stated timelines and goals and to reach agreement on a common vision.</p> <p>Prioritize investments in building revitalization and a low-carbon future.</p> <p>Revitalize the buildings to reflect the leadership and values of the nation's best practices. Share information locally and globally.</p>



These are the Capitol DAT's recommendations going forward. Some of these concepts are not new, but they come at a time when the context of our world has changed dramatically.

The Capitol DAT believes there is a need for a deeply held sense of urgency regarding the workplace and constituent experience, the real impact of the built environment on climate change, the need for energy security, and the increasing cost to the taxpayers by deferring action on these important issues.

The Capitol DAT believes, parallel to immediately acting on these recommendations, that a change in the culture of Capitol Hill as a whole needs to occur and that a continual education and awareness emphasis by the House leadership with its members will move the Congress forward to 2020.

"INSANITY: Doing the same thing over and over and expecting different results."

- Albert Einstein

For more information on the workspace, the built environment, and other related information:
The American Institute of Architects - www.aia.org
The AIA Sustainability Initiatives - www.aia.org/susn_rc_cl_default

Quality of Life

High priority issues and opportunities

EXISTING OFFICE CONDITIONS

Crowded, inefficient, and enormously consumptive of resources (human, energy, and financial) are operating under a model created in 1908



2020 CONDITIONS UTILIZING EXISTING APPROACH

Continuing the current “oil the squeaky wheel” system or funding incremental projects supported by the most influential members without a clear integrated investment plan will continue to reduce quality of life and efficiency while increasing operating costs and the cost of deferred maintenance.



“Status quo is backwards; it’s bad for your pocketbook and it’s bad for your children.”

- Perry Plumart, Deputy Director,
Green the Capitol Office

2020 CONDITIONS UTILIZING INTEGRATED DESIGN AND MANAGEMENT STRATEGY

Piloting and tracking best management practices in integrated design, office ergonomics, technology, and human resource strategies will improve quality of life and efficiency while reducing costs.



QUALITY OF LIFE (cont.)

DESIGN & MANAGEMENT PRINCIPLES

1. Optimize

Ergonomics: design layout, furnishings and equipment for the human system

Daylighting: increase visual acuity and cognitive capacity

Biophilia: connect occupants with nature

Healthy environment: provide temperature, air quality and humidity control

Acoustical environment: provide for good communication and privacy

2. Create opportunities for

Collaboration

Flexible work schedule

Remote work

State of the art communications

Information management systems

Electronic networking/virtual conferencing

The above items will increase

Sense of well being

Human health

Productivity

Employee satisfaction and retention

Constituent's positive opinion of leadership and government

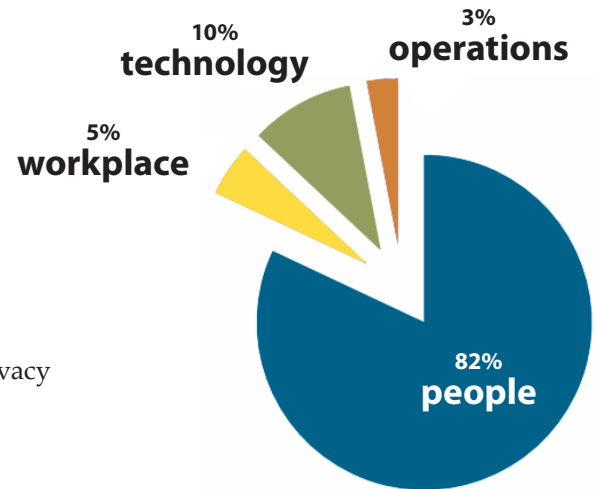
... and decrease

Staff turnover

Consumption of resources

Communication and meeting complaints

Operating costs



On average, 80% of operating expenses are associated with employees.



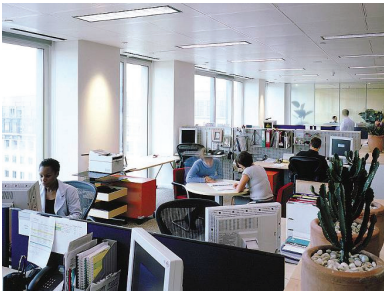
Increased productivity results from integrated design principles.

"We shape our buildings and thereafter our buildings shape our lives."

- Winston Churchill

New Ways of Working

Changing times, changing behaviors



Designing spaces that support different types of work.

“Space needs are never going to be solved without technological advances to reduce paper and increase efficiencies.”

- Staff Member

OBSERVATIONS

Member’s three-room suites are at capacity within the context of their current use. Despite a range in the number of staff per office, most offices are pressed for space, and struggle to accommodate a Member office, staff and intern workspaces, meeting spaces for a range of group sizes, waiting areas, supply storage, large technology such as printers, copiers and servers and often a kitchenette/break space. Inefficiencies exist with the way space is allocated and used. Providing “more of the same” is not a sustainable option given the predicted future growth of district population and Membership staff. In order to accommodate future changes and growth, re-thinking current work processes, how space is currently used, and the relationship between the two is critical.

The DAT recommendations address re-evaluating the office at both the physical and procedural levels. Improvement of the existing conditions in Member offices is dependent on increased integration of technology and the centralization of shared meeting and resource spaces.

TECHNOLOGY

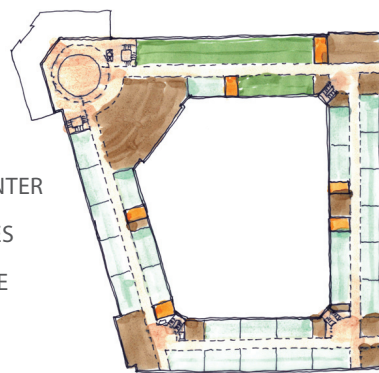
The existing policy of a distinct technological infrastructure for each individual Member office is unsustainable on multiple levels. Individual computer servers have limited capacity, limiting the number of documents that can be handled digitally, reinforcing a reliance on paper, inhibiting future capabilities, and increasing the amount of time and money spent on system maintenance, upgrades, and IT support.

Creation of a centralized computer server that allows each office to securely create, manage and store documents electronically would greatly increase operational productivity. It would simultaneously create new physical space

opportunities, without the need for significant space dedicated to paper and file storage.

We recommend re-evaluating House procedures to incorporate modern technology, such as electronic document submittal and signatures, into existing legislative protocols and procedures

- RESOURCE CENTER
- MEMBER SUITES
- SPEAKER SPACE
- CIRCULATION
- OTHER



**Cannon House Office Building
- 1st Floor**

NEW WAYS OF WORKING (cont.)

where applicable. This would save significant Member and staff time and resources, and would enable new ways of working. Re-allocation of resources between a Member's Capitol Hill and district offices could also occur.

CONSOLIDATION OF SPACES & PROCESSES

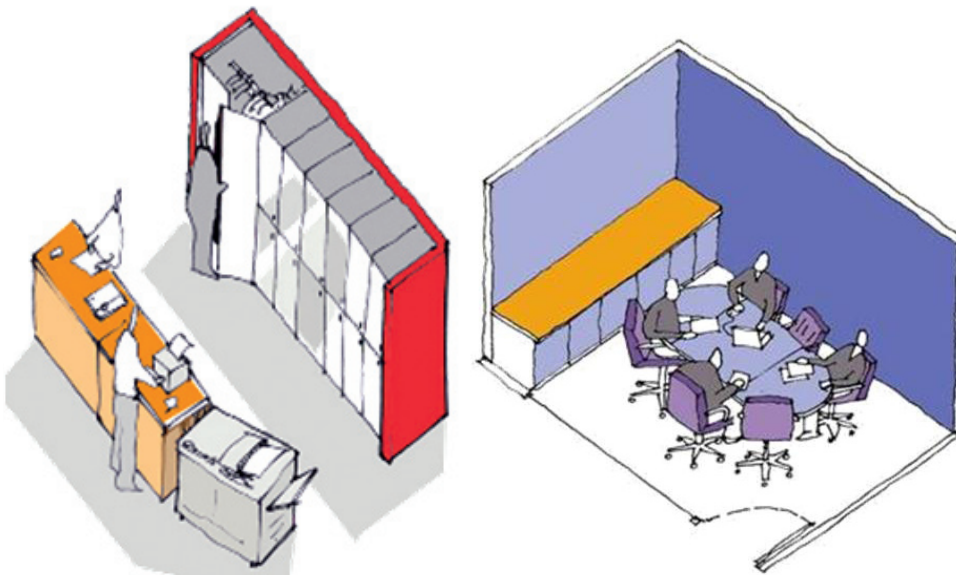
Shared spaces could be re-used as centralized resource centers, that house large photocopiers, scanners, and other document production equipment. Removing these from individual member spaces decreases the plug load and heat generation within each office and the building as a whole, creates more space within individual offices, and increases the efficiency of the machines. Some resource centers could be staffed and offer high volume scanning and document services, supporting the transition to less paper-dependent House operations.

Supply acquisition and storage should also be re-evaluated, potentially eliminating the need to store excess supplies within individual offices, both conserving resources and freeing up space that can be used for more Member and staff centered functions.

Increased availability of shared, centralized meeting spaces is also critical. Non-Member office spaces, similar to the current self-scheduled meeting spaces, could be shared by Members and their staff to alleviate some of the capacity issues within Member suites, facilitate meetings with large constituent groups, and allow more room for individual workspaces and smaller meeting areas within offices. Adaptive use of other underutilized spaces, such as excess circulation spaces, unused phone booths, and smoking rooms is also encouraged.

"The House Office Buildings were not built to be efficient, like the business world."

- House staff



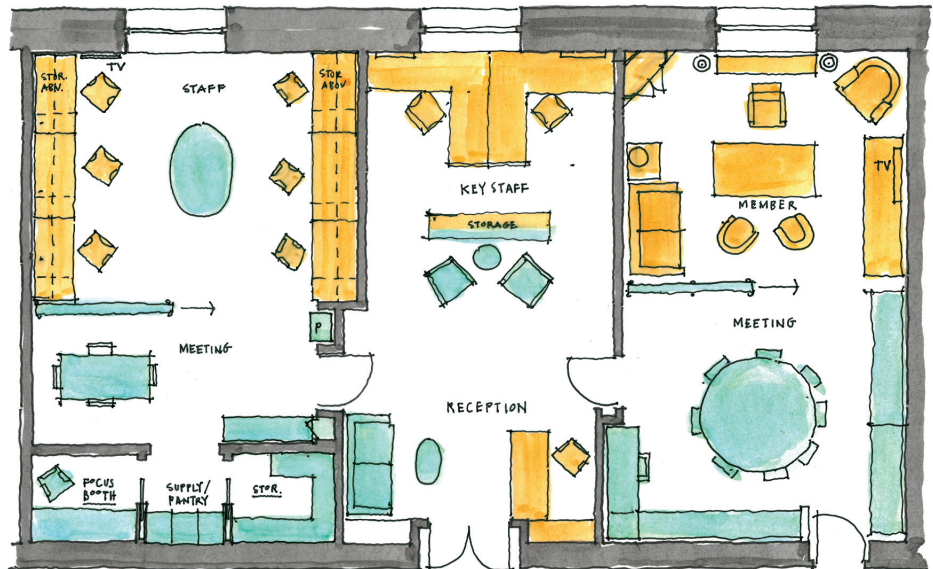
Shared centralized resource and meeting spaces.

SUITE LAYOUT

Incorporating the previous two process changes creates a significant opportunity to re-think existing Member suite layouts to utilize space more effectively, increase space efficiency, and create an office that supports all users, including both staff and visitors. Increasing the adaptability of the space is a central theme, as well as focusing on the functionality of the different types of space – individual workspaces, meeting and visitor reception areas. The two plans below show potential suite layout scenarios.

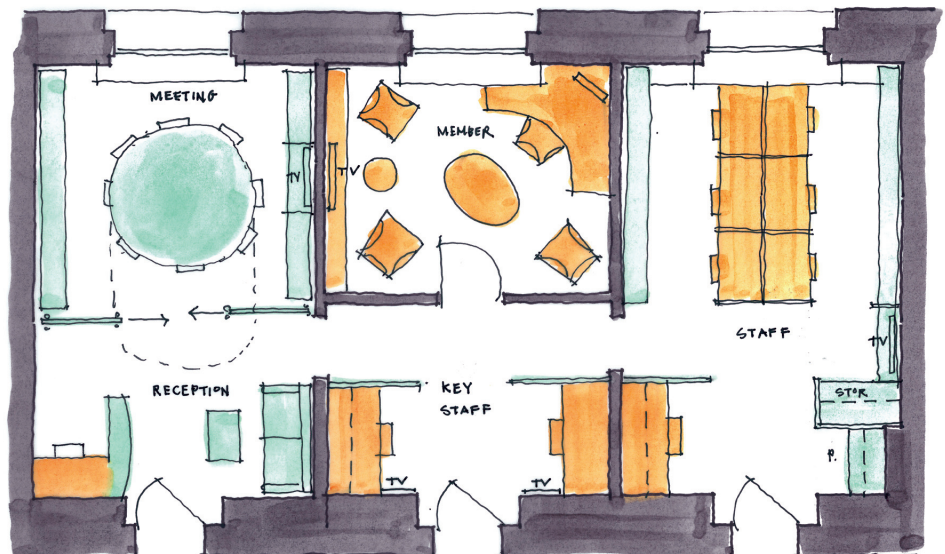
Concept 1

Lowering workspace partitions opens up the space, increases communication, and can frequently lower the noise level of the space by making people more aware of their surroundings. Utilizing flexible furniture allows adaptability within the space to accommodate a wider variety of functions. Dividing a room with a movable partition allows the entire space to be used when meeting with a large constituent group, or close off personal workspace to allow free use of the meeting space by staff when the Member is not in the office.



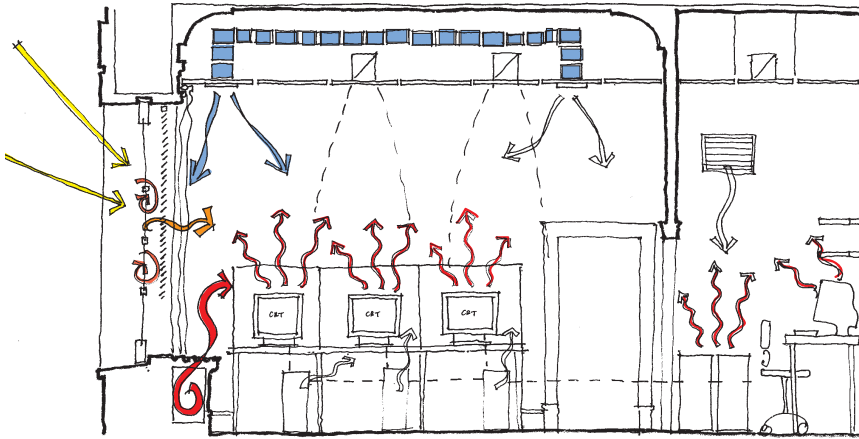
Concept 2

Creating a centralized work area for staff members can foster collaboration, interaction, and productivity. Incorporating an unassigned, enclosable space that can be used on an as needed basis adds flexibility. A more conscious delineation between public and private spaces can also help dictate the space layout and better support all user experiences. Upgrading to high efficiency systems can create additional square footage that can be used for workspaces instead of equipment.



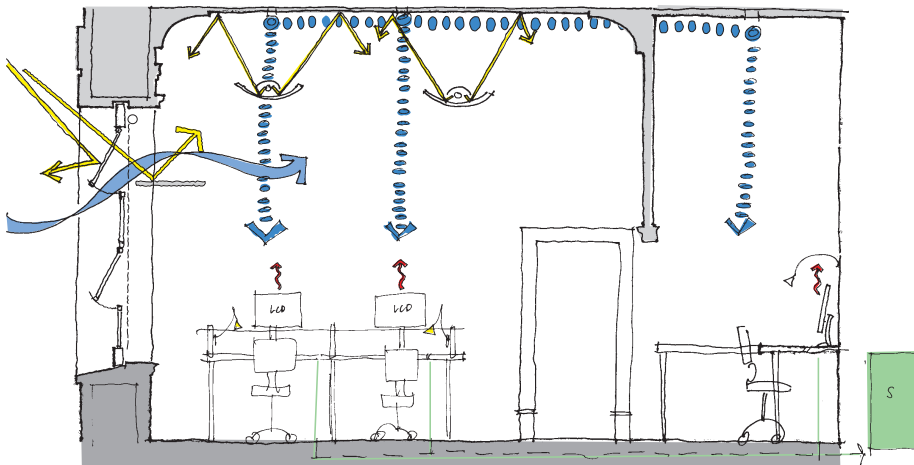
NEW WAYS OF WORKING (cont.)

HIGH PERFORMANCE SPACES



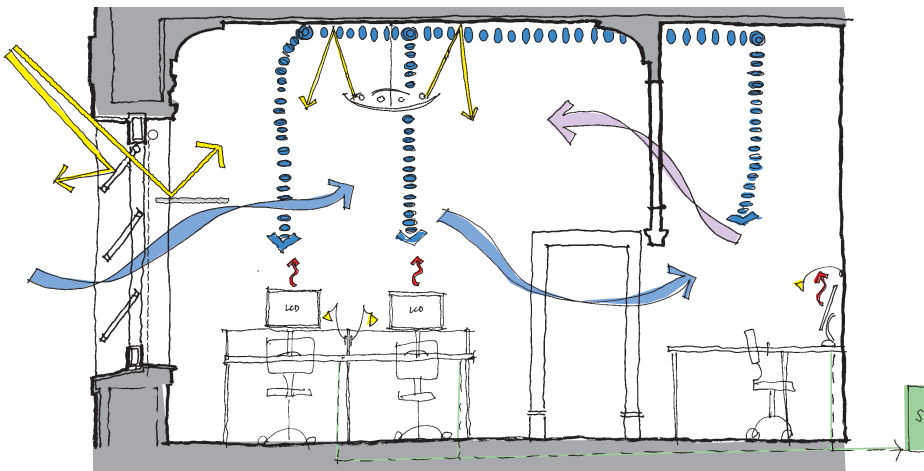
Business as Usual

Describes a marginally efficient space with unused, operable, inefficient window, a large cooling load created by heat producing office equipment in close quarters, poor air circulation, and a drop ceiling with code compliant light fixtures.



Green Suite

Contains operable windows, increased ventilation effectiveness, improved lighting, enhanced day-lighting, and reduced plug load.



High Performance Suite

Contains operable windows, increased ventilation effectiveness, improved lighting, enhanced day-lighting and daylight harvesting, as well as significantly reduced plug load, high performance glazing and envelope improvements. Eliminates perimeter heating and cooling systems, and integrates next-generation lighting systems.

Within the Footprint

Opportunities for change

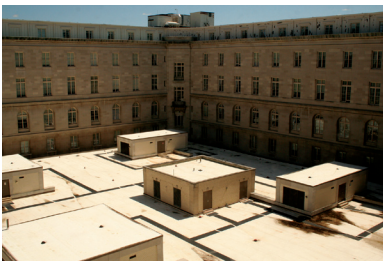
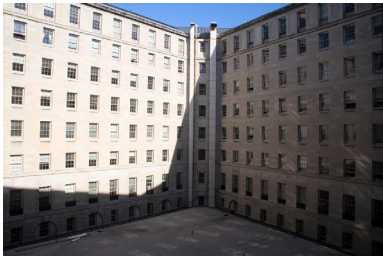
“We cannot build our way to sustainability, we must conserve our way to it.”

Carl Elefante, *Forum Journal*,
September 2007

There are opportunities for expansion and enhancement within the existing House Office Buildings that should be carefully considered prior to determining whether construction of new buildings is necessary or prudent.

OPPORTUNITIES: Greening the Courtyards

The original designs for each of the House Office Buildings featured one or more courtyards enclosed by office wings. As the buildings have evolved over time, most of these substantial outdoor spaces have lost their original sense of place and their relationship to the buildings and the people within the buildings. Reclaiming and “greening” these outdoor spaces and functionally connecting them to each building affords an opportunity to begin to alleviate overcrowding within the buildings and improve the occupants’ quality of life.



Rayburn
Longworth
Cannon

- The west courtyard of Rayburn is a lovely exterior space that is entirely underutilized. While it is accessible to the public, it is not frequented by the public. Closing off the western boundary of the courtyard would enable building occupants to actively use the west courtyard without exiting the secured zone.
- The cafeteria in the basement of Rayburn currently leads directly to the west courtyard. Once the courtyard becomes part of the secured zone, Members, staff, and constituents will be able to use the courtyard for dining, meetings, press conferences, etc. Circulation across the courtyard will also provide a link between the north and south wings that enframe it.
- The Longworth courtyard is divided into northern and southern sectors, with the southern of the two being deeper. Adding green roofs, a water feature, paths, benches, etc. to the courtyard will create a more attractive vista from interior offices, as well as an environment that will be more sustainable in terms of drainage, insulation value and heat island reduction.
- Historic drawings indicate that Cannon was originally designed with a courtyard that featured a raised planting area and a round reflecting pool or fountain. The design of the courtyard was an extension of the design of the building.
- Re-introducing a well-designed green space within the building will provide an outdoor area for occupants to enjoy, a pleasant view for office users to appreciate, and a more environmentally sensitive treatment of the courtyard.

WITHIN THE FOOTPRINT (cont.)

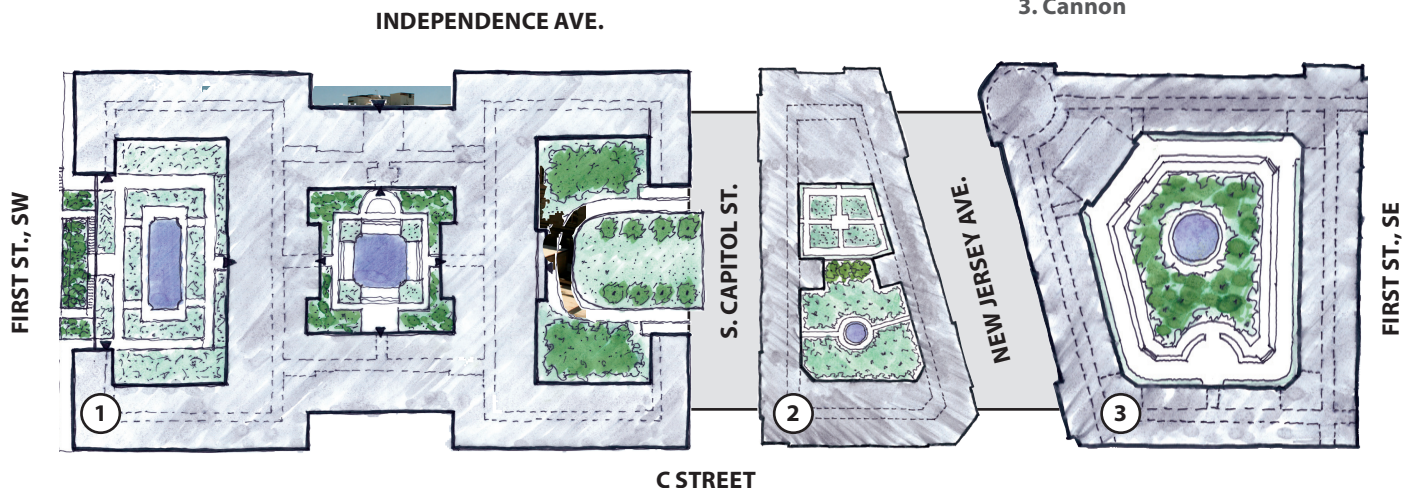
OPPORTUNITIES: Creating Walkable Streets

Currently, the only way to travel from one House Office Building to another without exiting the secured zone is to use the labyrinth of underground tunnels that connect the buildings. Even on the nicest days, building occupants never venture outside because doing so would require going through security screening upon re-entry. There is a high level of inefficiency involved with going to the basements of the buildings each time one wants to cross the street, as well as a loss in the quality of the experience.

- Permitting people to go outside to get from one building to the next would provide a healthy and pleasant alternative to basement access between the buildings. Making the areas between the buildings an attractive green space and eliminating the cars would further enhance the experience. Adding outdoor amenities, a coffee cart, will ensure it's success.
- Since the streets that run between the House Office Buildings are already restricted by manned security barriers, creating a secure "campus" by further limiting access to pedestrians would not be terribly difficult or costly.
- Adding a midblock entrance to the east side of Longworth would further improve the efficiency of closing off New Jersey Avenue between Longworth and Cannon.
- Constructing a gateway that is attractive and compatible with the historic architecture of the buildings is desirable and achievable. A green wall with gates is one way to accommodate controlled access without increasing the perception that the area has been walled off.



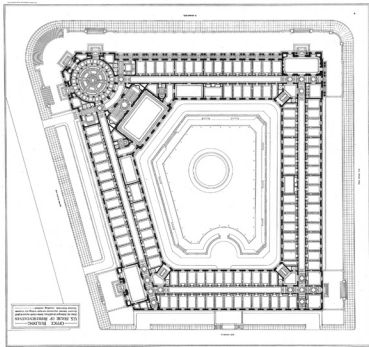
Green streets.



WITHIN THE FOOTPRINT (cont.)

"We have an opportunity to make a better space, and more."

- Rep. Earl Blumenauer, D-OR



Cannon House Office Building.
Original first floor plan, *circa* 1908.

OPPORTUNITIES: Enhancing the Roofs

The roofs of each House Office Building have long been neglected. One was raised shortly after the building was constructed to provide for additional office space and the others have been populated with various forms of mechanical equipment. The roofs should now be examined as a means of achieving improved space utilization and environmental sustainability.

- The roof of Cannon was raised and a fifth floor was added to the original four-story building in 1913 to alleviate overcrowding. The side of the fifth floor that faces the courtyard contains Members' suites, while the side that faces the outside of the building has a sloped roof, no windows, and contains assigned storage spaces.
- Relocating storage areas from the fifth floor of Cannon to a basement area would free up a significant amount of usable space. Daylighting could be accomplished by adding operable skylights to the sloped roof. The skylights could provide views and natural ventilation without being visible from public rights-of way, therefore they would not alter the historic character of the building.
- The reconfigured space at the fifth floor of Cannon could be used for Member suites, committee rooms or resource centers (containing flexible meeting space, copy machines, and kitchenettes). Since the spaces within this area will not have the volume that other areas of the building have, a larger square footage in each space is recommended.
- The roofs of Longworth and Rayburn offer significant opportunities for adding further green roofing (whether occupied or not) and for installing photo voltaic panels. The flat roofs of Rayburn, in particular, are well suited to accommodating sustainable technologies. Research into the newest systems of lightweight green roofing may make this a viable option on a building that will require reroofing in the near future.

"... helping people think about how they relate to the space."

- Rep. Earl Blumenauer D-OR

Investment Strategies

Creating a legacy for the next generation

VISION

This is a conversation about creating a long term investment strategy for the future of the United States House Office Buildings.

Similar to many other communities, the Capitol community is experiencing pressure to move to a 21st century workplace while creating a more sustainable future for the next generations with limited funding.

Solving complex problems like these takes more than individual action – it takes group action. The Capitol Complex Community needs to work together, to solve their problems in a holistic way and strengthen the fabric that binds them together.

The tools, models and plans for building a better future are all around those that have been charged to be the stewards of the community. This work at times remains unconnected to the bigger vision. By putting the pieces together the community has the opportunity and the means for profound positive changes.

It is critical that those that call this their community practice collaboration at every step to help build coalitions and movements to manage growth so that they can deliver on the promises of democracy that these buildings represent.

Developing a new House Office Buildings investment strategy is a team sport!

OBSERVATIONS

The current budget and election cycles do not allow for coordinated strategies to optimize the utilization of existing resources and to develop adequate future resources to support the Capitol complex.

- Deferred maintenance on the buildings is reaching \$3.2 billion dollars.
- Strategic expenditures are needed to meet the goals of the Green the Capitol Initiative.
- Coordinated strategies for long term sustainability are not part of the current system.
- Renovation Cycle for the Cannon, Longworth, and Rayburn Buildings is currently estimated to be 20 years.



“If you don’t know where you are going, you are certain to end up somewhere else.”

- Yogi Berra

ESTABLISH STRATEGIC DIRECTIONS & INSTITUTIONAL PRIORITIES

In order to define a new paradigm for the Capitol, the priorities should have goals and metrics in each of the following areas:

Financial Benefits

- Improve value of the assets
- Reduction in energy usage
- Lower operations & maintenance expenses

Occupant Lifestyle Benefits

- Increase tenant comfort and satisfaction
- Improve tenant attraction and retention

Community Benefits

- Demonstrate shared community values
- Create a great sustainable community

Opportunities

Move to a comprehensive planning approach - involving the entire organization. Look at previous assumptions and embrace change where required.

Excel by ...

Making energy consumption reduction a core business strategy. Using life-cycle cost analysis to inform decision-making.

Recognizing and rewarding users for meeting or exceeding energy goals and improving the quality of life

Environment

- Reduce pollution and emissions generated via energy production

Leadership

- Cultivate a reputation of innovation
- Produce a legacy of achievement
- Signal the strength of your team to the American public

RECOMMENDATIONS

- Educate staff and Members on the links between energy and organizational success and winning ways to manage both.
- Build on successes by tracking and publicizing achievements.
- Reward the team, and develop an organizational radar to find the next big opportunity.
- Comprehensive planning shall guide improvements and bridge beyond the current leadership
- Accelerate the investment cycle for house office buildings to achieve greater financial and energy savings.
- Invest in building two prototype 21st century Member suites in Cannon, Longworth, and Rayburn in 2009.

Leadership Opportunities

Local, National, Global: Lead by Doing

PLACE

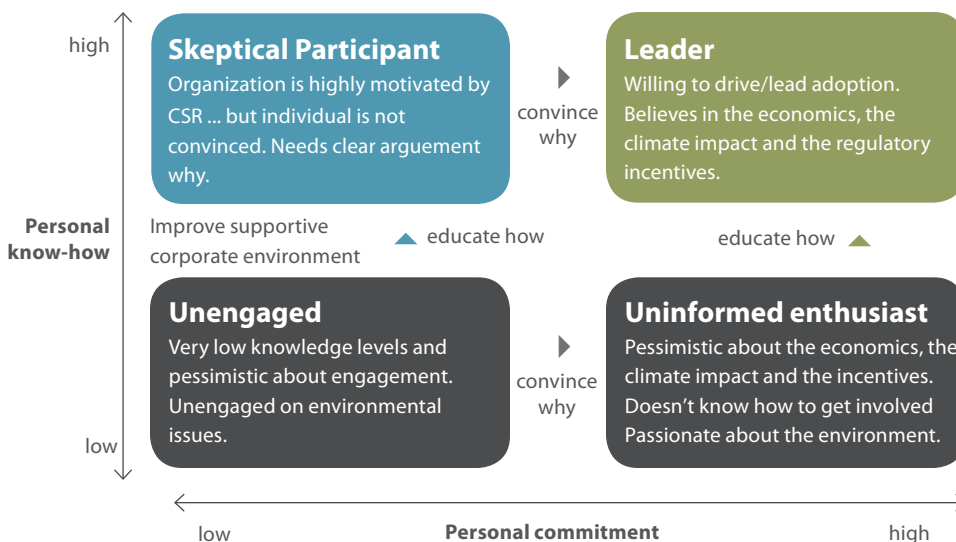
The Nation’s Capital holds a special place in the hearts and minds of all citizens, and stands as a global icon of leadership and effectiveness. The House Office buildings – operating at 21st century effectiveness – provide a unique opportunity to demonstrate our environmental commitment to the world, to our nation and to our communities. It is an opportunity to “lead by doing.”



The Bi-annual Solar Decathlon held on the National Mall, holds the World’s attention and can be used as a catalyst and exemplar parallel idea.

SHIFTING MINDSETS

As we move towards our next era of effectiveness and efficiency, while maintaining our valued institutions, we must engage with all our community members and seek support and enthusiasm to shift our collective mindsets to a higher quality environment for the work that we do.



LEADERSHIP OPPORTUNITIES (cont.)

ACTION

To meet the goals of the “Greening of the Capitol” initiative we will adopt the robust and tried and tested 4 R methodology: Reduce, Reuse, Recycle, Plus RETHINK – on all systems whether physical, natural or human.

A leadership approach is needed by the community but beginning at the highest levels of the Capitol ... leading by example

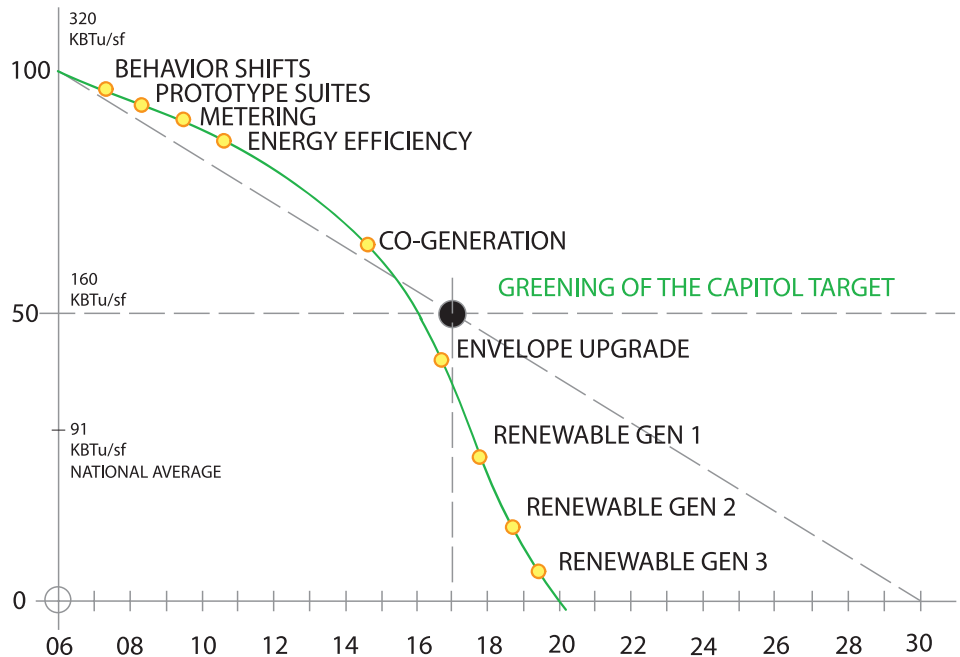
Lead by doing !



Existing Greening of the Capitol education materials.

BENDING THE CURVE TO 2020

set goals → map → engage → measure



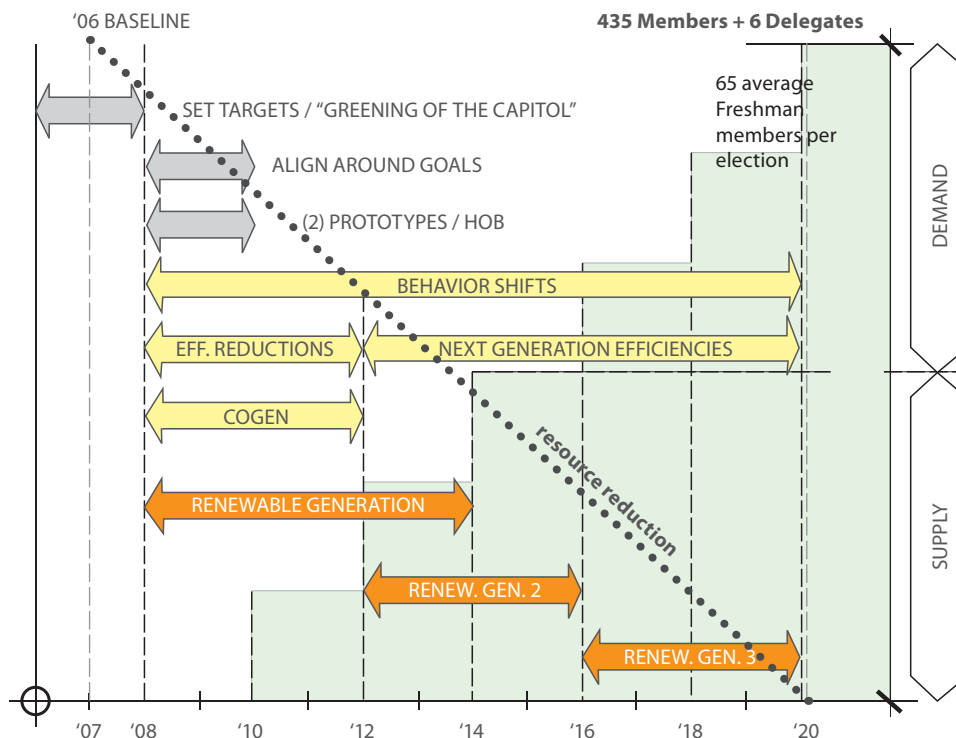
LEADERSHIP OPPORTUNITIES (cont.)

SMART MOVES

Start Now! The urgency of addressing crowded, inefficient offices, and the spiraling operating costs (energy costs alone have increased by 50% in the last two years) rule out the luxury of deferring action until the existing planning, design and funding process has been entirely completed. Planning must proceed but parallel/coordinated incremental action is critical to avoid delaying significant increases in efficiency, and enormous energy and carbon reductions and the associated cost for at least six years. The return on most integrated investments should be very favorable.

Create Pilot Projects demonstrating state of the art strategies for integrated office design and best management practices. Locate two offices per building to be retrofitted in 2008. Measure the results carefully (metering energy consumption and monitoring human health and productivity) to inform the planning, design and funding of future investments. Significant savings will be realized from these improvements (the House office buildings consume three times the energy

A STRATEGY FOR REACHING 2020 GOALS



LEADERSHIP OPPORTUNITIES (cont.)

of comparable efficient office buildings in the city, and daylight harvesting systems, one of many strategies, currently operating on the Capitol Campus are showing 75% savings alone).

Cultural Change and full participation is the key to success! Utilize education, incentives and feedback loops to accelerate change. Link behavior to outcomes and establish systems for measurement and reward. Rewarding Members and staffs for utilizing efficient IT systems, remote shared print/copy centers/document scanning and telework options strategies, while maintaining the integrity and independence of the members. CAO and AOC could partner with the Committee on House Administration to establish new standards and incentives. Another example is transportation. Providing parking is expensive but offered free to members and their staffs while walking, riding a bike or the Metro have no cost impact to government but currently include disincentives for those who choose these options, such as paying for the Metro or conflicts with work and metro schedules.

Footprinting. Create economic performance and ecological footprints for each Congressional Member (individuals and office). Track and report the results annually. This will provide information that will enhance decision making, and create healthy competition for higher performance.

Creating a path to 2020 (the year of 'perfect vision' and inspired leadership). A clear vision of the goal (We're going to the moon) and a map for getting there will inform the process and accelerate results if it is accurately monitored, adjusted and the results celebrated.

Integrate. Overlay and integrate the multitude of important initiatives taking place on the Capitol Campus to catalyze activities, identify synergistic benefits, minimize costs and maximize outcomes.

Triple Bottom Line. Every decision and investment must increase the vitality of the social, economic and environmental systems.