Walking the Talk:
The Greening of the AIA Headquarters

Virginia Sustainable Building Network
12th Annual Meeting
Moving toward Carbon Neutral Buildings

June 28, 2007

Greg Mella, AIA LEED AP

SMITHGROUP

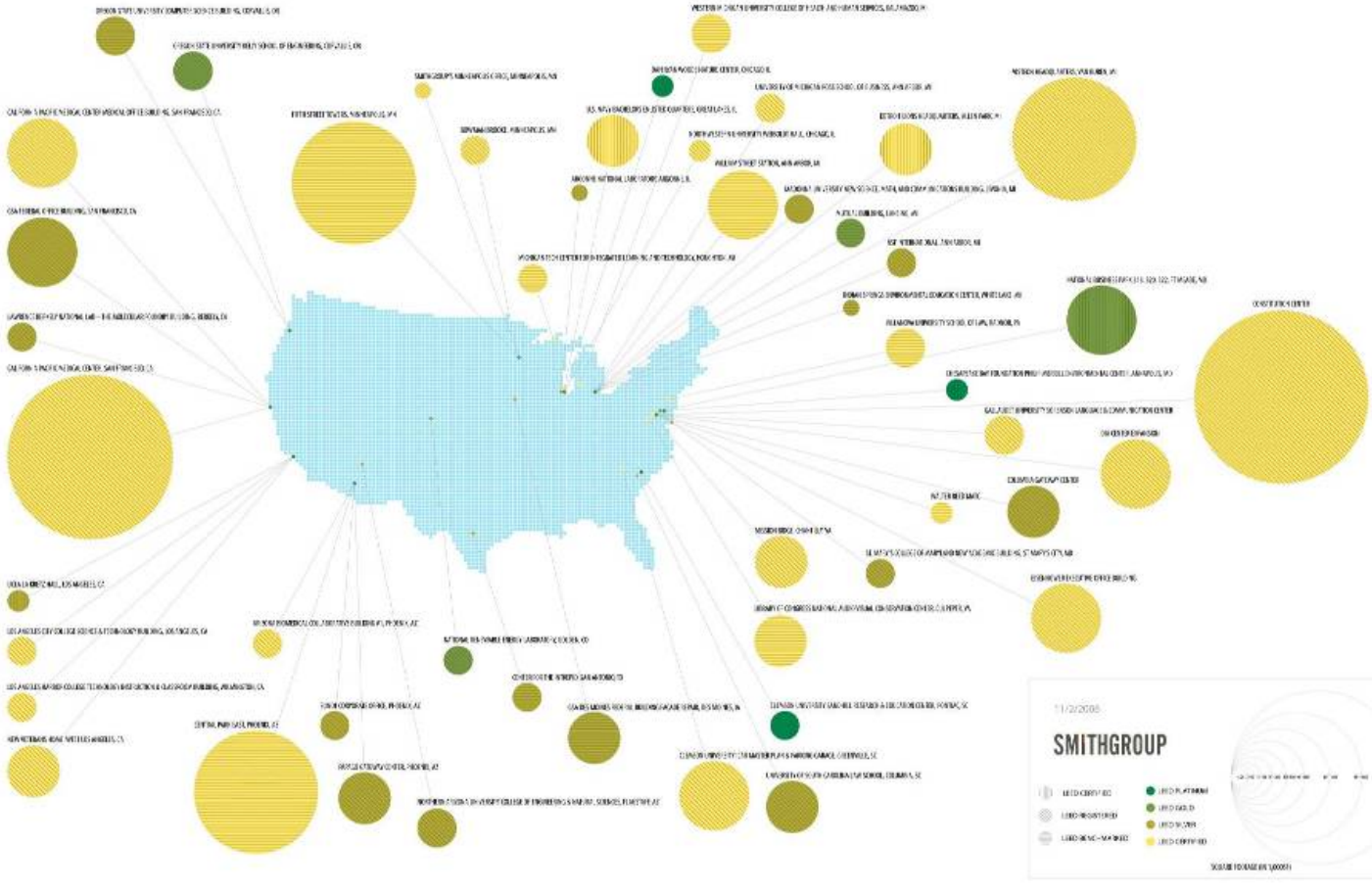
architecture engineering interiors planning

65 LEED-certified and/or sustainable design projects

$3.7 billion in construction dollars / Over 15 million gsf

243 LEED Accredited Professionals nationwide

84 LEED AP are located in the Washington office



AIA Building Renovation Committee

- AIA president, CEP, Treasurer, CFO, Facilities manager
- AIA executive committee
- Practicing architects (volunteers)

AIA Sustainable Discussion Group (SDiG)

SUSTAIANABILITY2030

AIA Committee on the Environment (COTE)

- Advisory Group
- Adjunct Advisory Group

AIA Sustainable Architectural Practice Position Statement

December 2005

AIA - Sustainable Architectural Practice Position Statement

The AIA recognizes a growing body of evidence that demonstrates current planning, design, construction, and real estate practices contribute to patterns of resource consumption that seriously jeopardize the future of the Earth's population.

Architects need to accept responsibility for their role in creating the built environment and, consequently, believe we must alter our profession's actions and encourage our clients and the entire design and construction industry to join with us to change the course of the planet's future.

AIA - Sustainable Architectural Practice Position Statement

Promote sustainable design including resource conservation to achieve a minimum 50 percent reduction from the current level of consumption of fossil fuels used to construct and operate new and renovated buildings by the year 2010, and promote further reductions of remaining fossil fuel consumption by 10 percent or more in each of the following five years;

AIA - Sustainable Architectural Practice Position Statement

AIA's carbon emission reduction targets

By 2010: New Buildings - 50%

2010 – 60%
2015 – 70%
2020 – 80%
2025 – 90%

2030 - net zero carbon emissions

The COTE Measures of Sustainability

1. Sustainable design intent & innovation
2. Regional community design/connectivity
3. Land use & site ecology
4. Bioclimatic design
5. Light & air
6. Water cycle
7. Energy flows & energy future
8. Materials & construction
9. Long life & loose fit
10. Collective wisdom & feedback loops

The COTE Measures of Sustainability

COTE Top Ten Measures -	*USGBC LEED™ Rating System*
Sustainable Design Intent & Innovation	Innovation & Design Process
Long Life, Loose Fit	
Lessons Learned & Feedback Loops	
Regional/Community Design & Connectivity	
Land Use & Site Ecology	Sustainable Sites
Bioclimatic Design	
Energy Flows & Energy Future	Energy & Atmosphere
Light & Air	Indoor Environmental Quality
Water Cycle	Water Efficiency
Materials & Construction	Materials & Resources

AIA – Outcomes…

Greening of the
AIA Headquarters

Greening of the
Awards Programs

SDiG / 50to50

AIA Sustainability Discussion Group (SDiG)

Norman Strong, FAIA
AIA VP, Sustainability

Dennis A. Andrejko, AIA
David P. Brems, FAIA
Marion L. Fowlkes, FAIA
Catherine M. Fritz, AIA
Greg Mella, AIA
Richard J. Jackson, MD, MPH
Diane Van Buren Jones
Stephen K. Loos, AIA
Edward Mazria, AIA
Celeste A. Novak, AIA, LEED AP
Robert P. Smith, AIA
Greg Staskiewicz, Assoc. AIA
(Arthur) Vernon Woodworth, AIA

Helene Dreiling, FAIA
VP, Strategic Initiatives and Relationships
Markku Allison, AIA
Resource Architect

50to50
Clarify means and methods "principles and practices"

Sustainability2030 Toolkit
A resource for leaders to guide sustainability efforts in their communities

AIA High Performance Building Standards
Defining sustainable practice & sustainable rating systems

Sustainability Education Initiative
Incorporating Sustainability into Architectural Education

Greening The AIA Venues

Software Developer Feedback
Incorporate sustainable considerations in BIM and software

SustAIAnability2030 Toolkit

AIA National Web Site

United States Conference of Mayors Web Site

Contents:

AIA

THE UNITED STATES CONFERENCE OF MAYORS

Why Are Architects and Green Buildings So Important?

Energy issues have been everywhere in the news lately, and concerns about rising gasoline costs and utility rates are two of the most pressing issues for American voters. Policymakers, the media, and the public seem to be focused on revamping our automobiles as the key to solving our energy and climate change problems. It might surprise them to know that achieving real reductions in energy usage and greenhouse gas emissions requires looking beyond cars, trucks, and SUVs, and that architects and architecture are central to the solution.

Buildings are the largest source of both energy consumption and greenhouse gas emissions in America as well as around the world. Buildings account for as much as 48 percent of all greenhouse emissions and 68 percent of electricity consumption. Furthermore, according to the National Institute of Building Sciences' Whole Building Design Guide, buildings generate 35 percent of the carbon dioxide (the primary greenhouse gas associated with climate change), 49 percent of the sulfur dioxide, and 25 percent of the nitrogen oxide found in the air.

Currently, the vast majority of this energy is produced from nonrenewable, fossil-fuel resources, and the amount of energy used to erect and operate buildings has been increasing dramatically. If current trends continue, U.S. annual energy consumption is projected to increase by 37 percent and greenhouse gas emissions by 36 percent in the next 20 years. Utility costs have also been on an upward trajectory, with electricity costs rising throughout the country. The Pew Center on Global Climate Change report entitled *Towards A Climate Friendly Built Environment* provides an excellent overview of the current environmental impact of building and construction and the profound effect that green buildings can have on the future health of our communities and planet.

for mayors and city councils, architects and the public.

to provide immediate introduction, principles and practices to members and sub-units devoted to Knowledge Communities.

50to50

Clarify means and methods "principles and practices"

http://www.aia.org/fiftytofifty

AIA 50to50

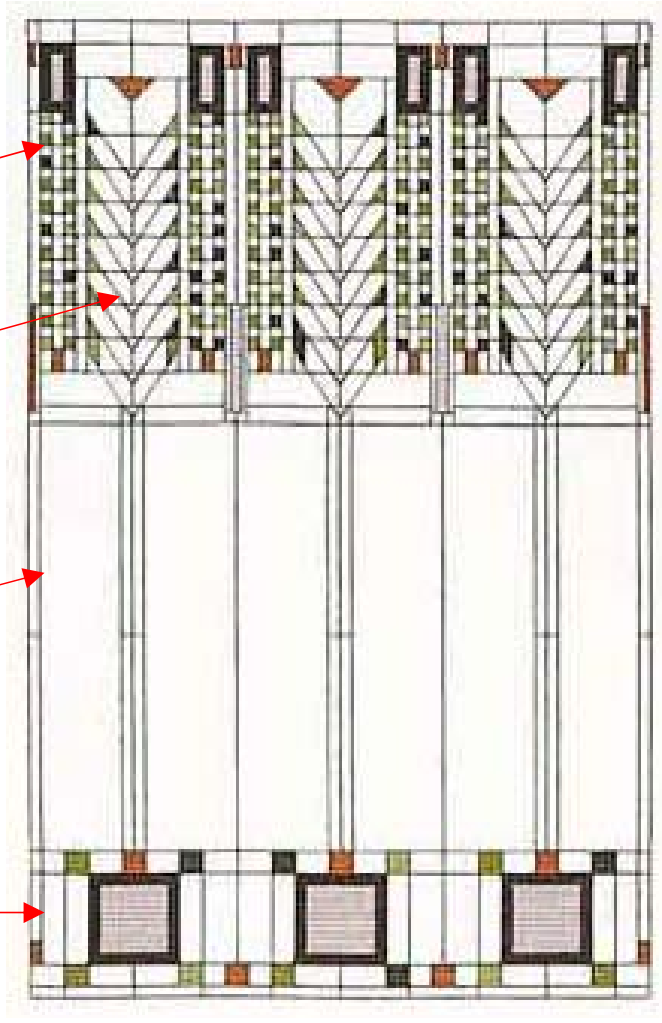
50»50

50 principles

Site, Skin, Space, Structure, Systems, Support

New / Existing / Community

COTE Top Ten Metrics



AIA 50to50

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Site,
Skin, Space, Structure,
Systems,
Support

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2. *Alternative transportation*
3. *Land utilization*
4. *Community development*
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7. *Low-maintenance landscape*
8. *Site furnishings*
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15. *Space utilization*
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Energy-saving landscape

Plant material and vegetation can be more than simple enhancement of landscape or nature on a project site. When thoughtfully considered as part of a sustainable project, it can influence microclimate as well as buffer, channel, control or filter wind, water, light and views.

- Vegetation for sun control
- Vegetation as buffering for damaging winds
- Buildings as buffers for damaging winds
- Tree/vegetation planting for carbon reduction
- Topographic manipulation to provide buffering damaging winds
- Topographic manipulation to provide enhancement of capturing breezes

Vegetation for Sun Control

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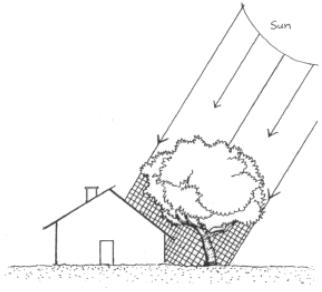

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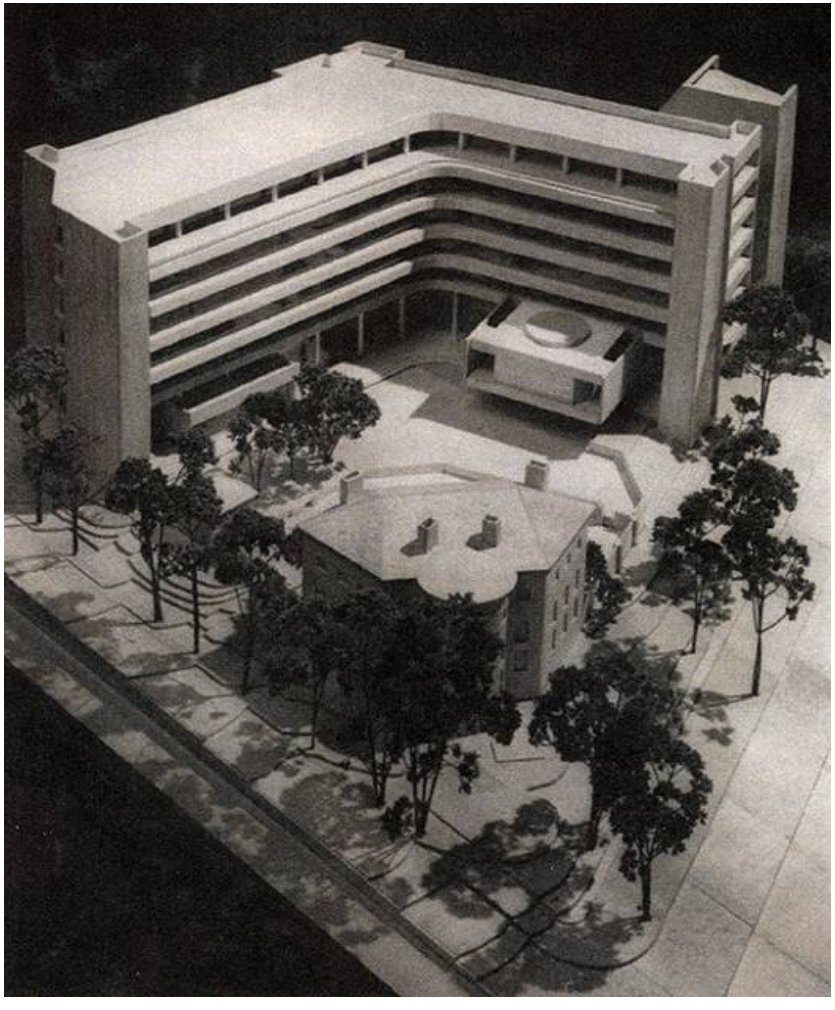
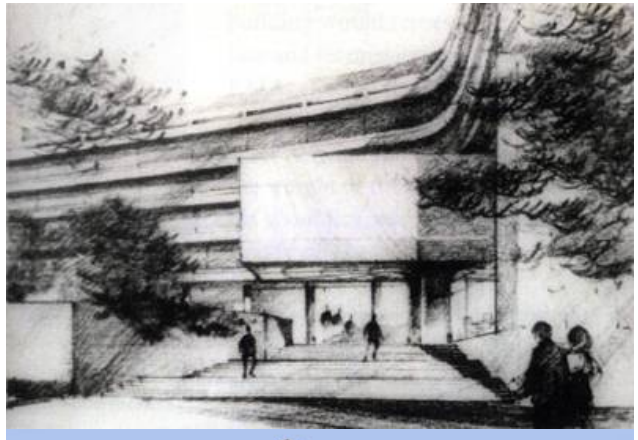
AIA Headquarters Renewal: Goals

Renewal of the AIA Headquarters is a once-in-a-generation opportunity to comprehensively upgrade the building as a whole. It leverages synergies within AIA's institutional goals:

- practicing responsible stewardship,
- optimizing space use on the AIA campus
- optimizing the AIA workplace
- "walking the talk" on sustainability.

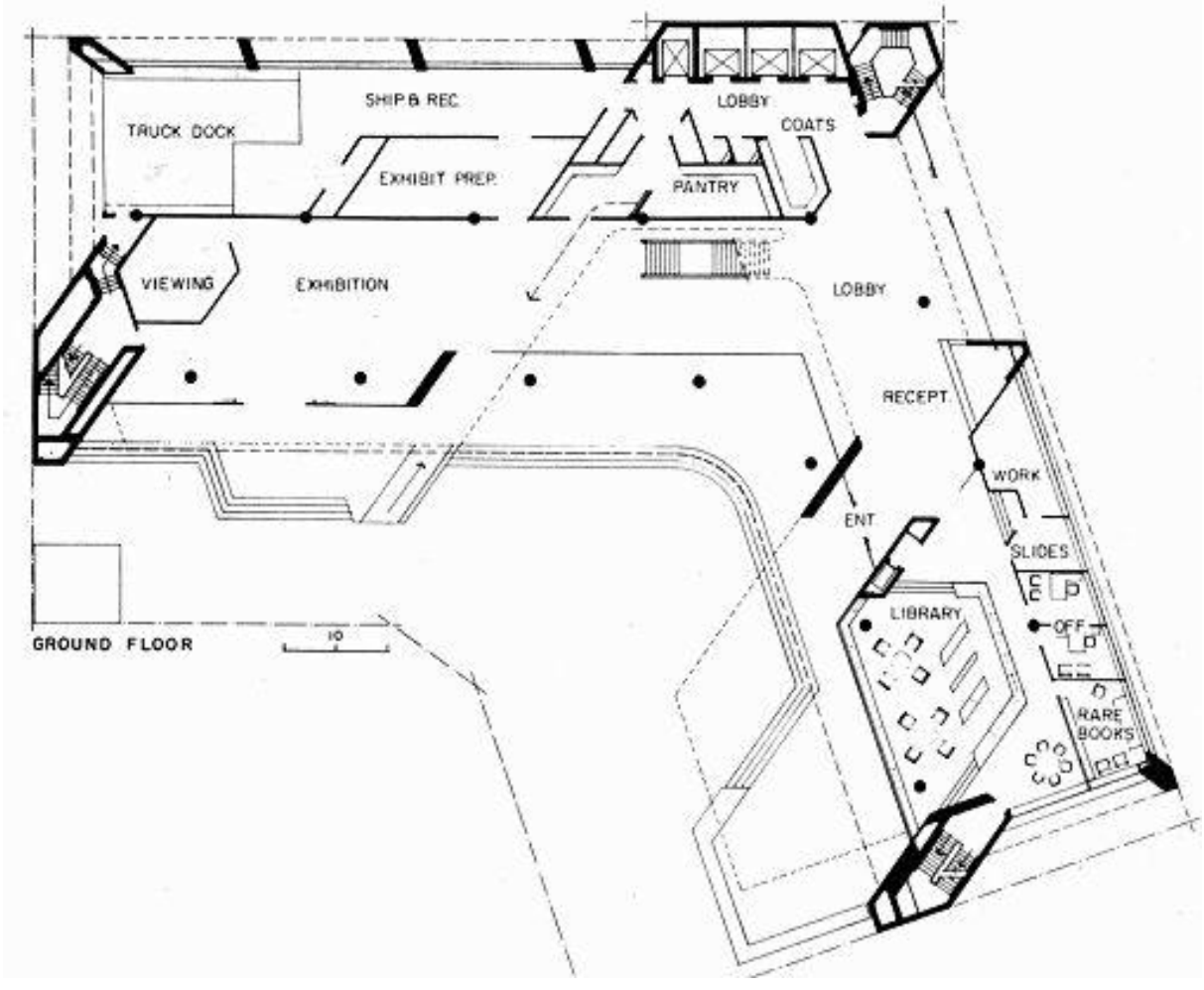
Practicing responsible stewardship:





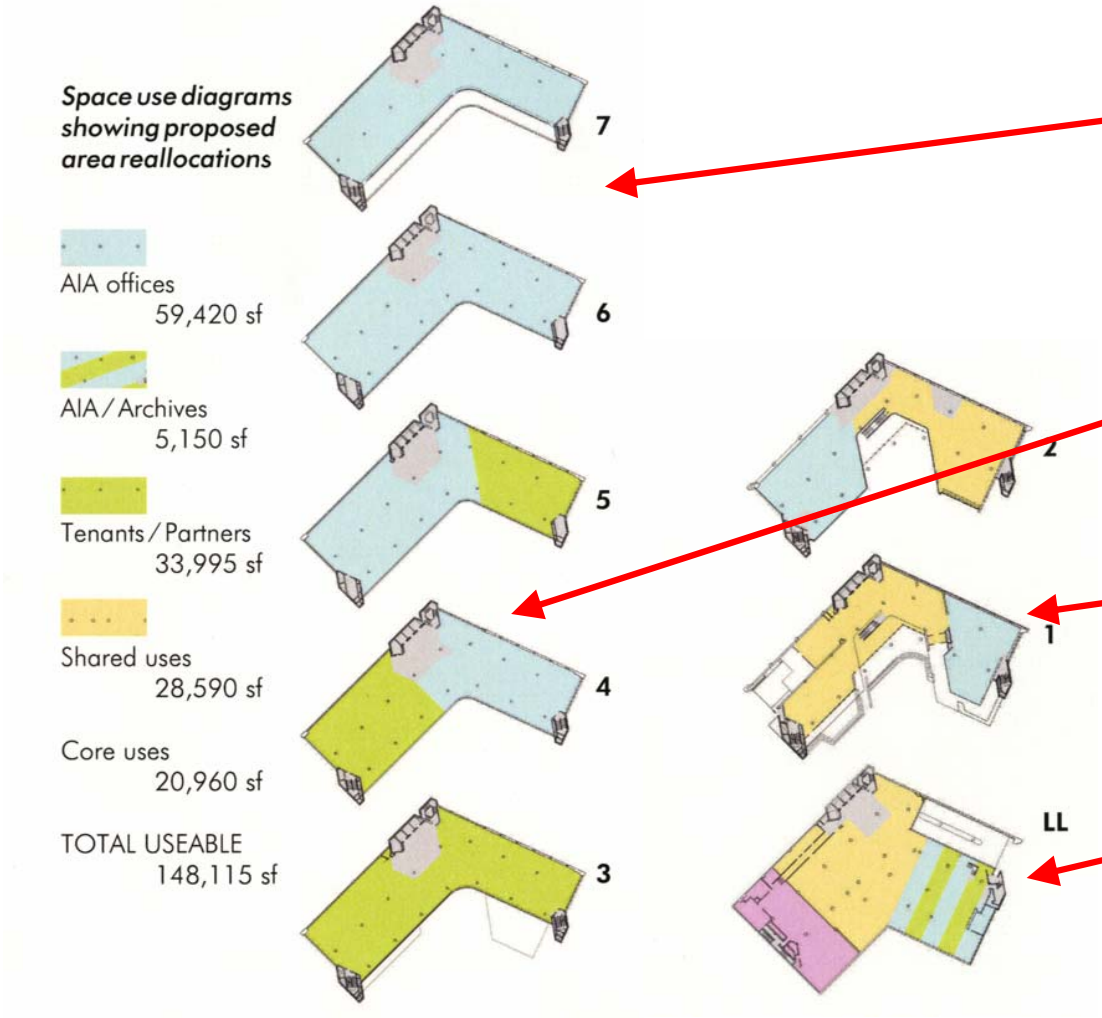
Designed by TAC, completed in 1973

Practicing responsible stewardship:



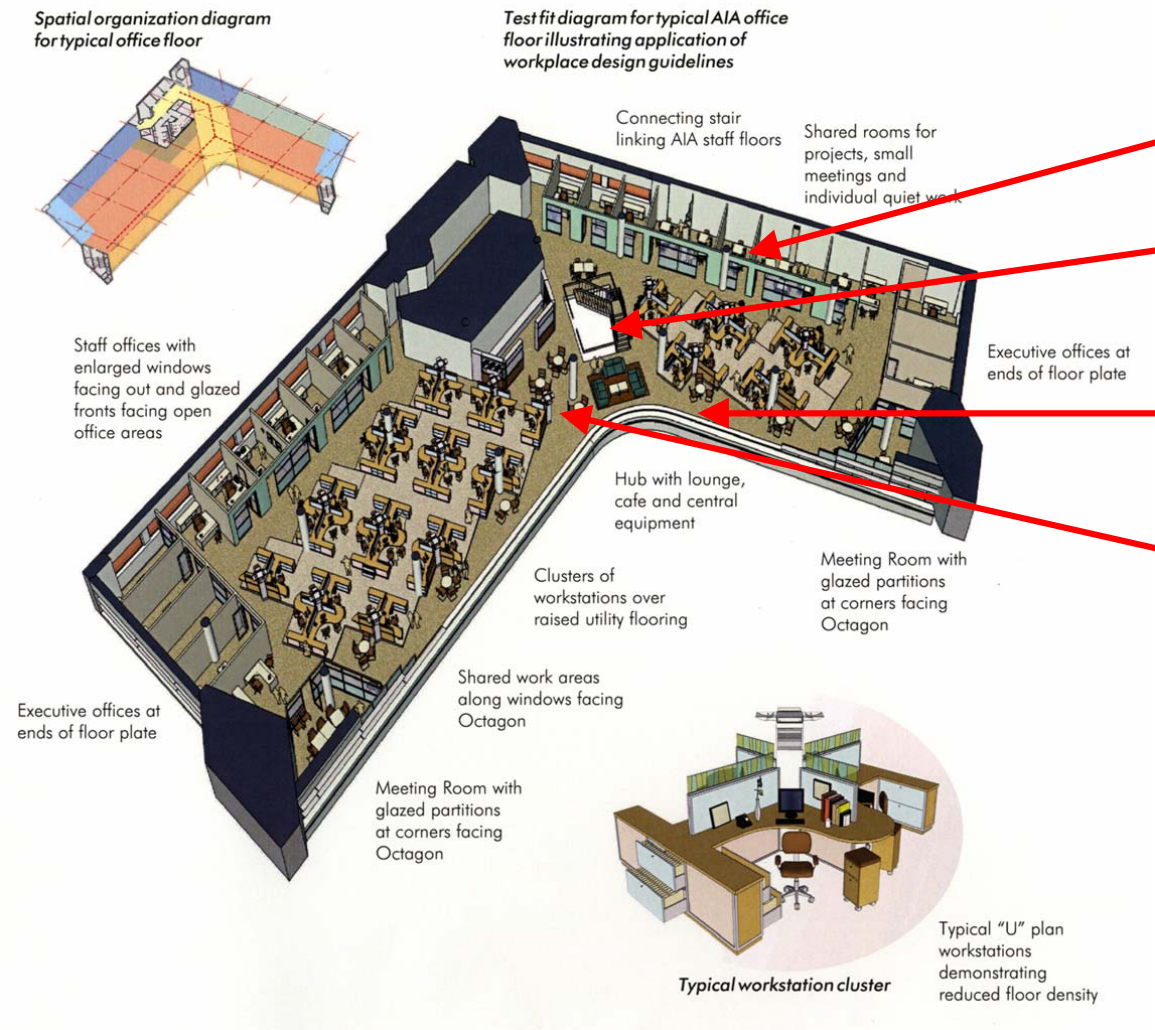
- **Single pane glass / Structural glazing**
- **Unprotected south glazing**
- **Exposed waffle slab**
- **Public first floor amenities**

Optimizing space use on the AIA campus:



- Relocate to the top floors of the building
- Provide opportunities for partnering with allied orgs.
- Restore 1st Floor to more public uses
- Get staff out of the basement!

Optimizing the AIA workplace:



- Less need for enclosed offices
- Connectivity between staff / between floors
- Equitable access to views and daylight
- More staff meeting spaces and amenities

“Walking the talk” on sustainability:

- Achieve a 50% reduction in Fossil Fuel consumption
- Provide a case study for the renewal of an significant, existing building
- In response to DC’s combined sewer system, maintain all stormwater on site
- Create a healthy, productive workplace
- Examine life-cycles of materials