

MUSEUM AND EXHIBIT DESIGN COMMITTEE MEETING  
Feb 25th, 2009

The Boston Society of Architects

## **The Effect of Gallery Layouts on the Museum Experience Case Studies: YCBA, MoMA, HMA**

Ipek Kaynar Rohloff  
[ipek@kaynar-rohloff.com](mailto:ipek@kaynar-rohloff.com)

Find more information here: [www.kaynar-rohloff.com](http://www.kaynar-rohloff.com)

# Overview

Take away:

The design decisions which most influence the museum visit experience.

Key factors in a museum visit experience:

- Content presentation
- Visitors' space-usage

We'll examine:

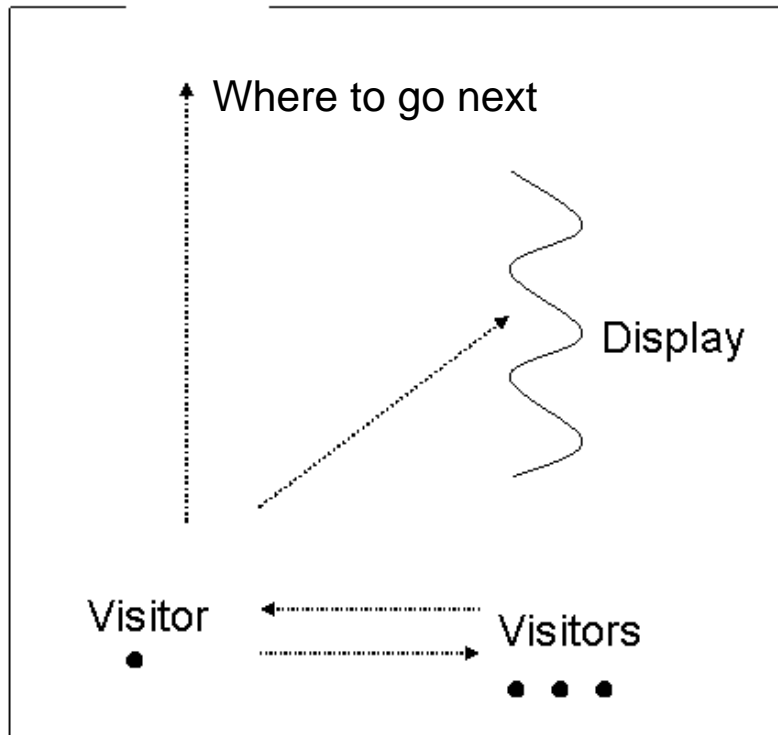
- Empirical analyses of visibility in museum spaces.
- How visibility aids content presentation.
- How visibility predicts space-usage.

# Contemporary Museum Architecture



# What do visitors interact with in museum spaces?

Gallery



# How that interaction is shaped by design

+ Permeability  
+ Visibility



*Can move and can see  
(Open plan arrangements)*

+ Permeability  
- Visibility



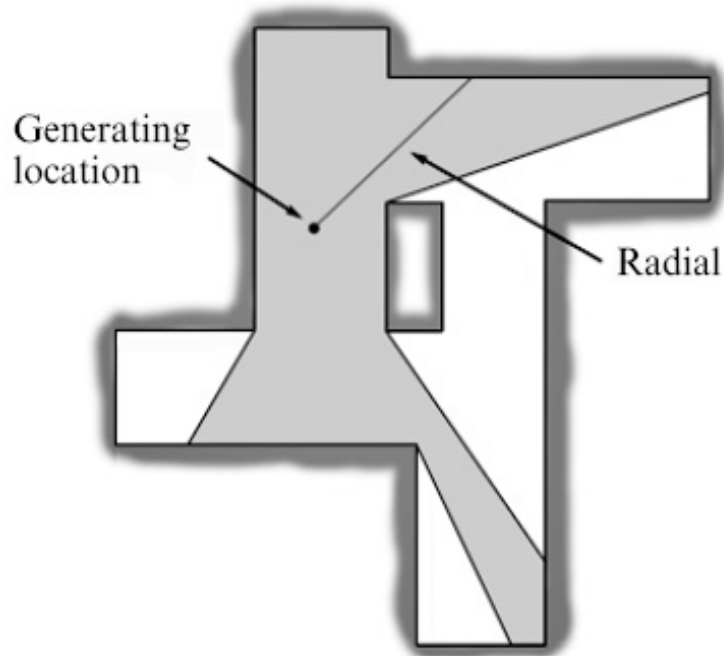
*Can move but cannot see all  
(Connections between rooms)*

- Permeability  
+ Visibility

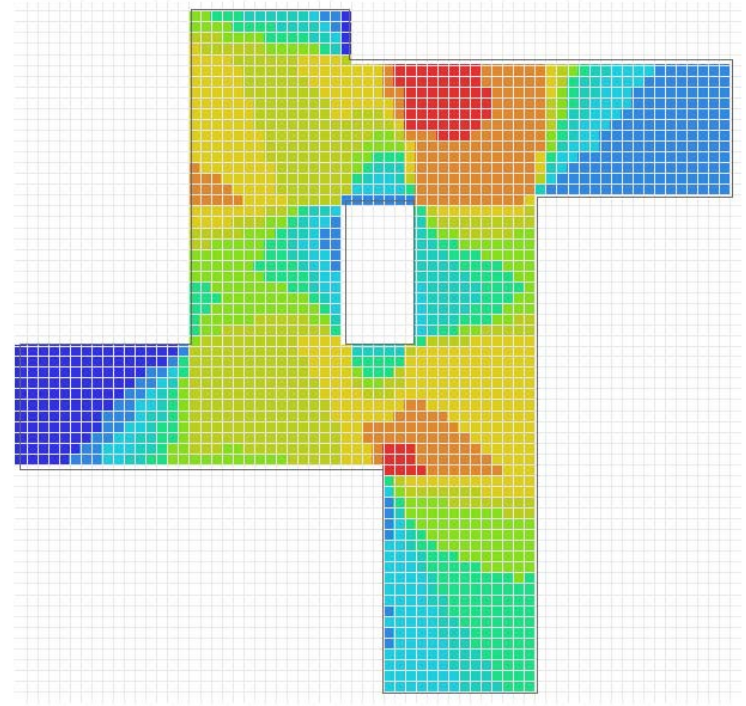


*Can see but cannot move  
(Connections through openings)*

# Space Syntax Analysis of Visibility Relationships



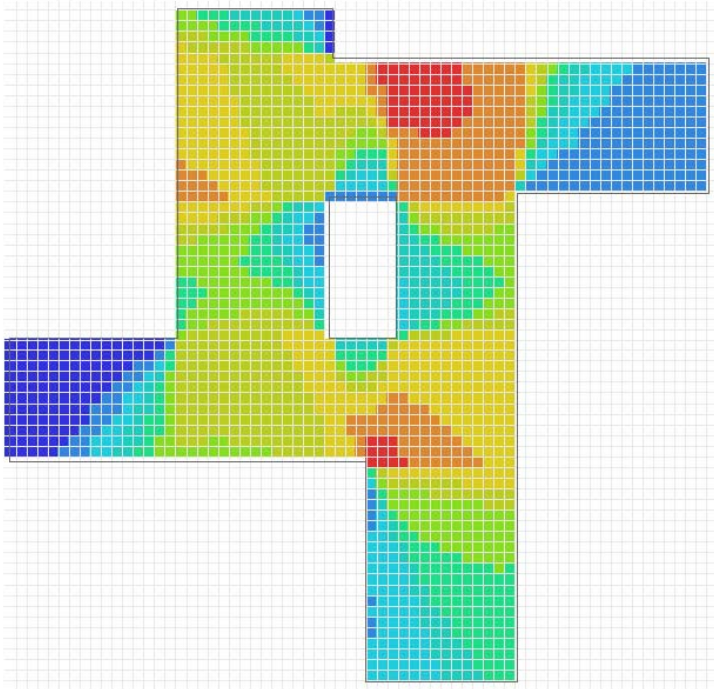
Visual field from a single point  
(M. Benedikt, 1979)



Visibility graph analysis:  
capacity of seeing neighboring locations

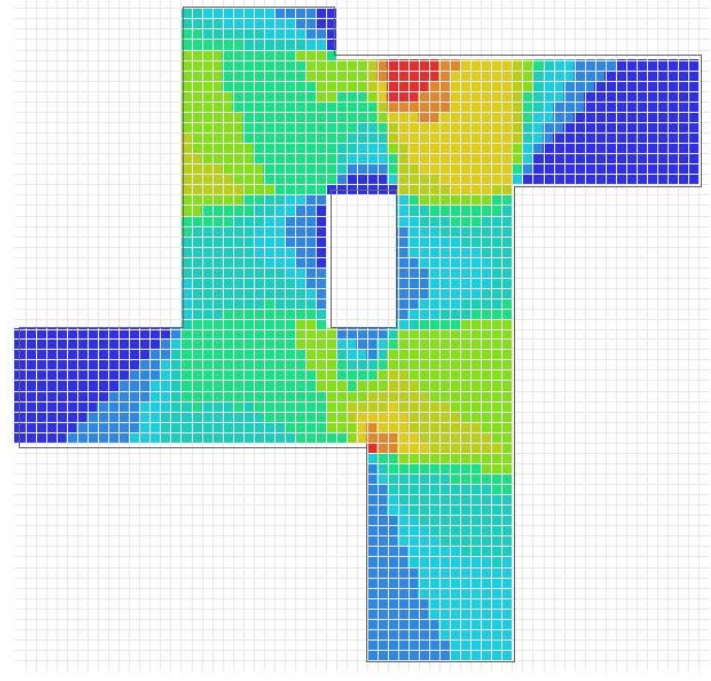


# Local and Global Visibility Relationships



**“Connectivity”  
(local visibility)**

*How much you can see  
without moving*



**“Integration”  
(global visibility)**

*How much you can see by  
moving a little*

High

Low



# Illustrative Case Studies



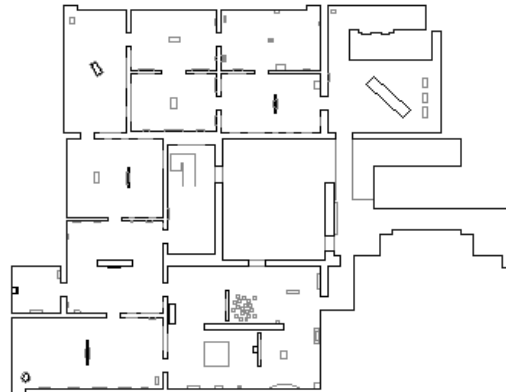
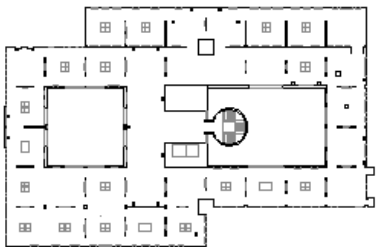
The Yale Center for  
British Art (1977), New  
Haven, CT



The Museum of Modern  
Art New Extension (2004),  
New York, NY



High Museum of Art,  
(1982, 2005) Atlanta, GA



\*Gallery layouts to scale



# Illustrative Case Studies: Atria Spaces

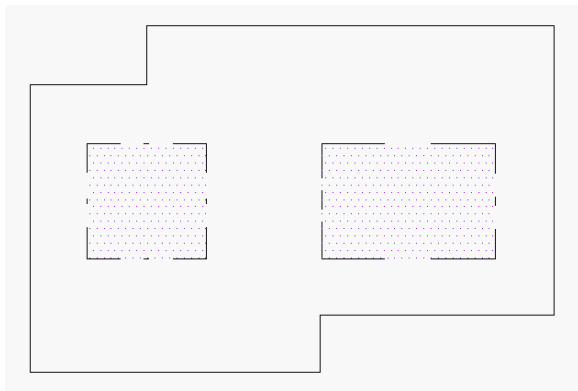
YCBA



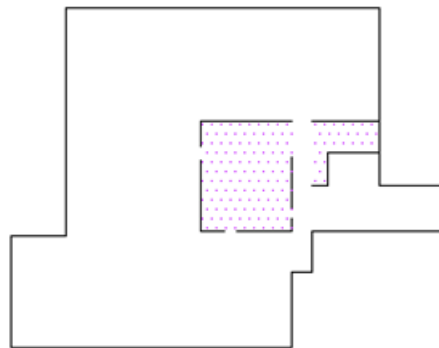
MoMA



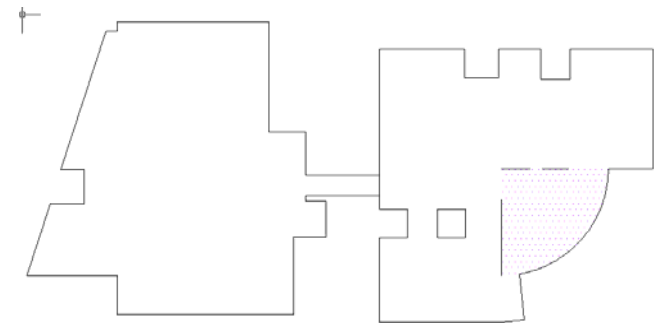
HMA



Largely open



Few openings



Open

# Illustrative Case Studies: Gallery Room Organization

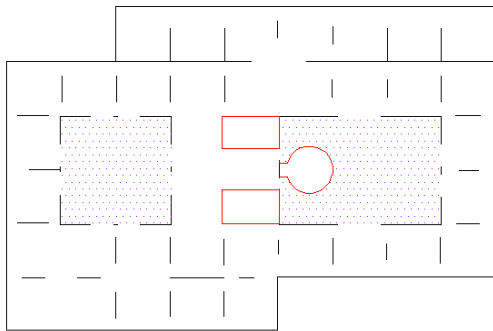
YCBA



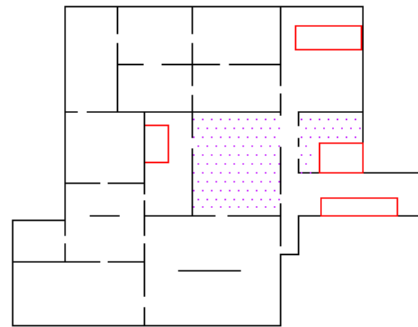
MoMA



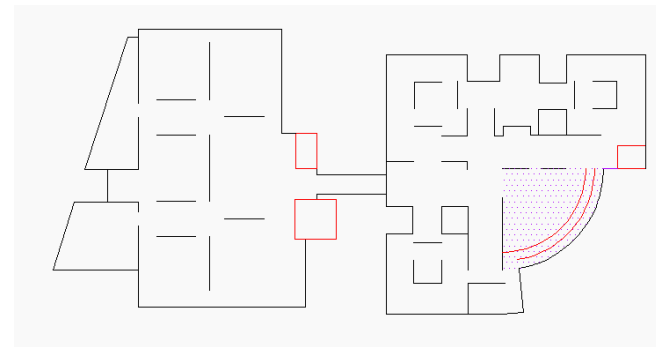
HMA



Room to room  
organization



Matrix of rooms



Room within a  
room

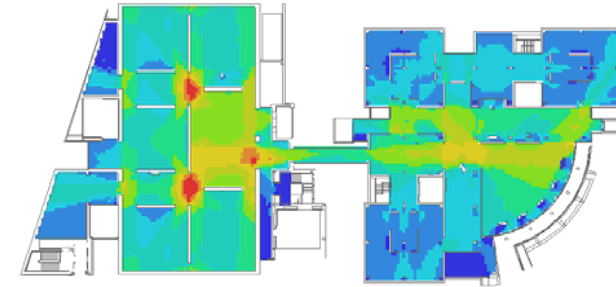
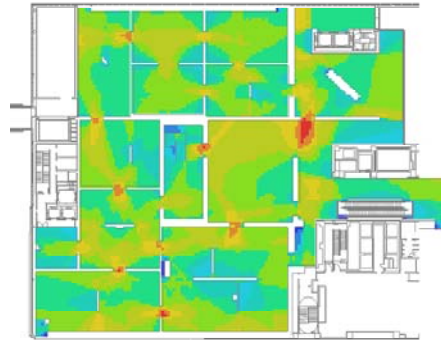
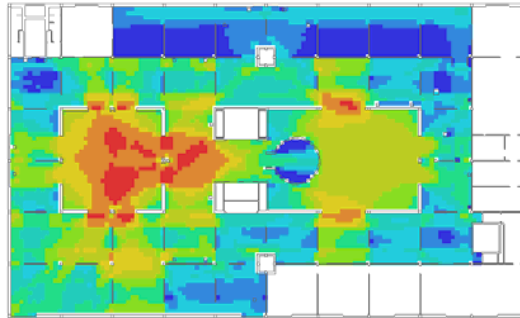
# Visibility in the Case Studies

YCBA

MoMA

HMA

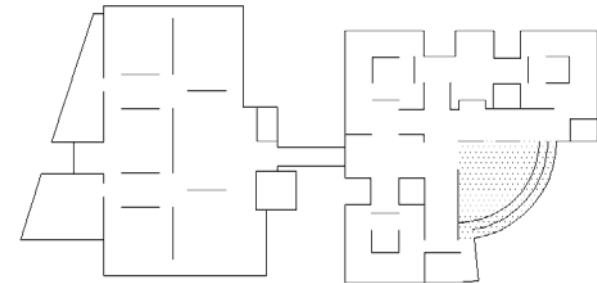
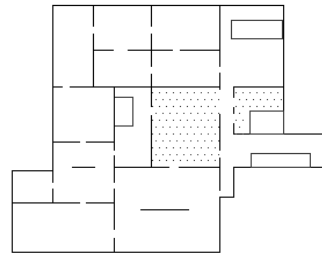
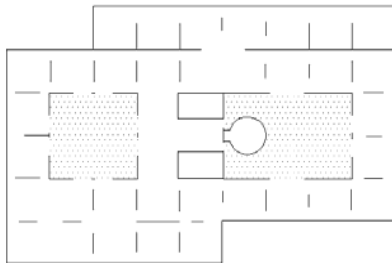
Local  
visibility



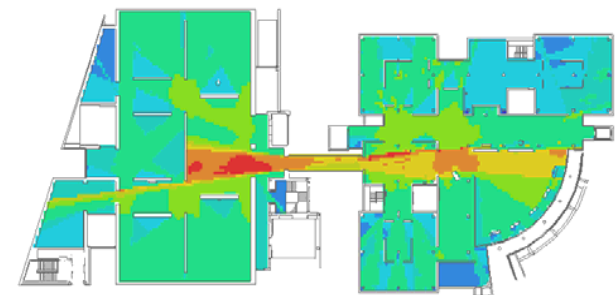
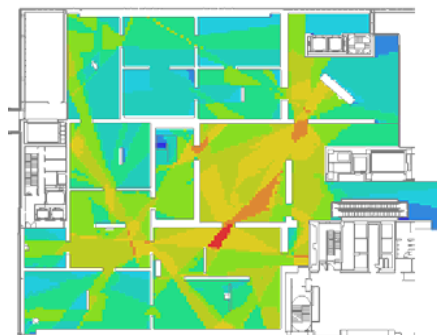
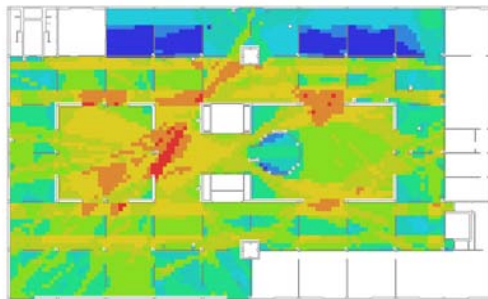
High visibility of neighborhood at  
atrium openings

Moderate visibility of adjacent  
spaces at gallery doorways

High visibility of neighborhood at  
gallery corners of the Wieland wing



Global  
visibility



Being visually close to everywhere  
due to connectivity through atria  
and rooms

Moderate levels of global visibility  
in the south galleries due to atrium  
openings and gallery connections

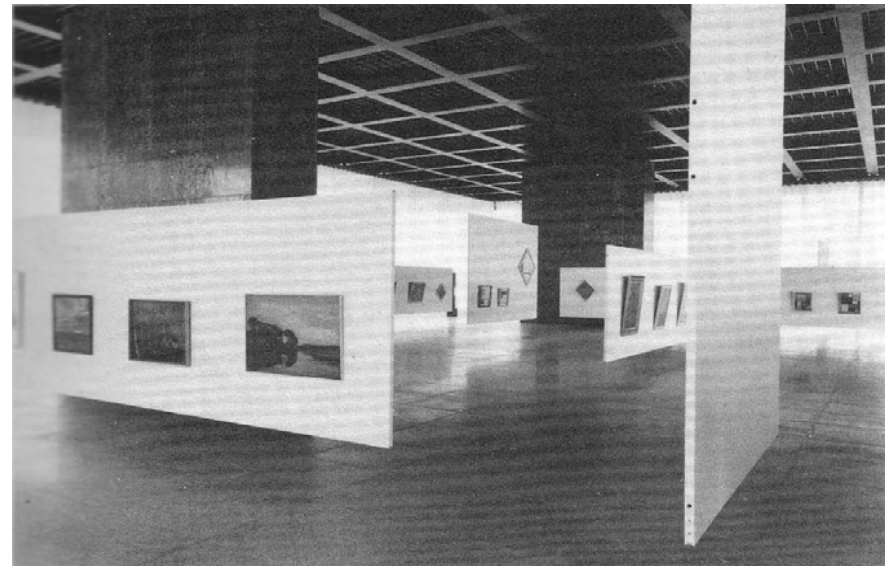
Moderate levels of global visibility  
in the south galleries due to atrium  
openings

# How do visibility relationships shape exhibition presentation?

Limited visibility dictates viewing sequence

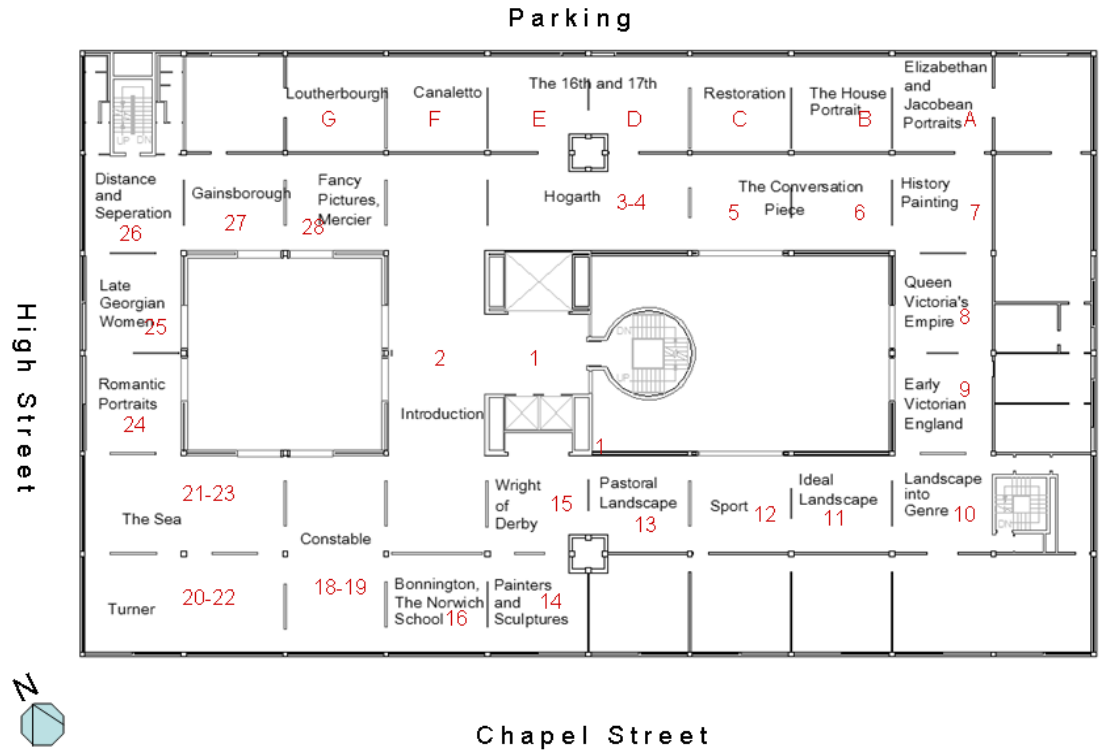


Visual interconnectivity provides multiple opportunities to visually compare displays?



# Exhibition Content Presentation in the Gallery Layout

## The Yale Center for British Art



Exhibition content:

British Art between 16<sup>th</sup>-19<sup>th</sup> centuries

Curatorial interpretation:

Scholarly appreciation of British Art and Culture

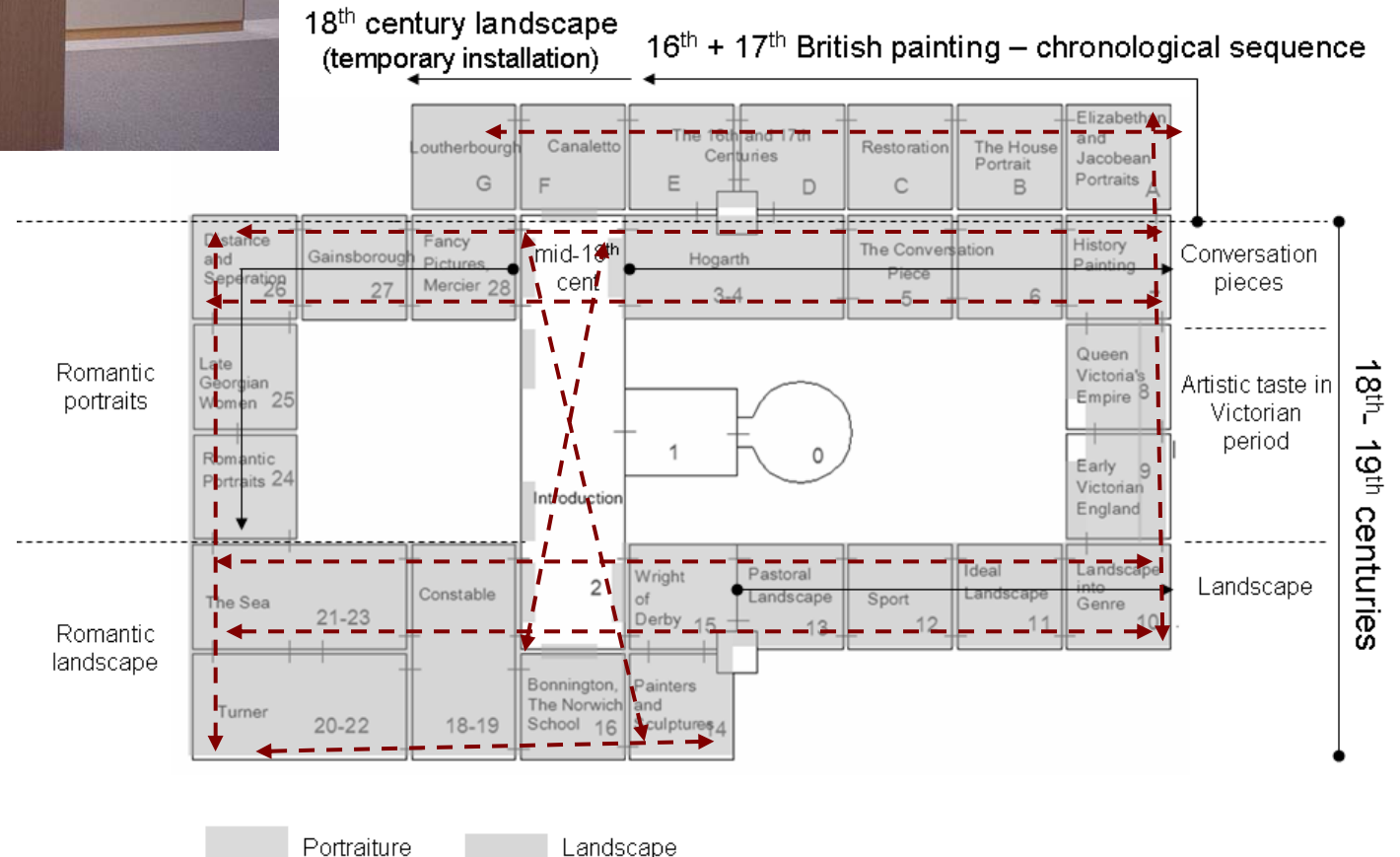


# How does gallery space exposes displays to visitors?

The Yale Center for British Art



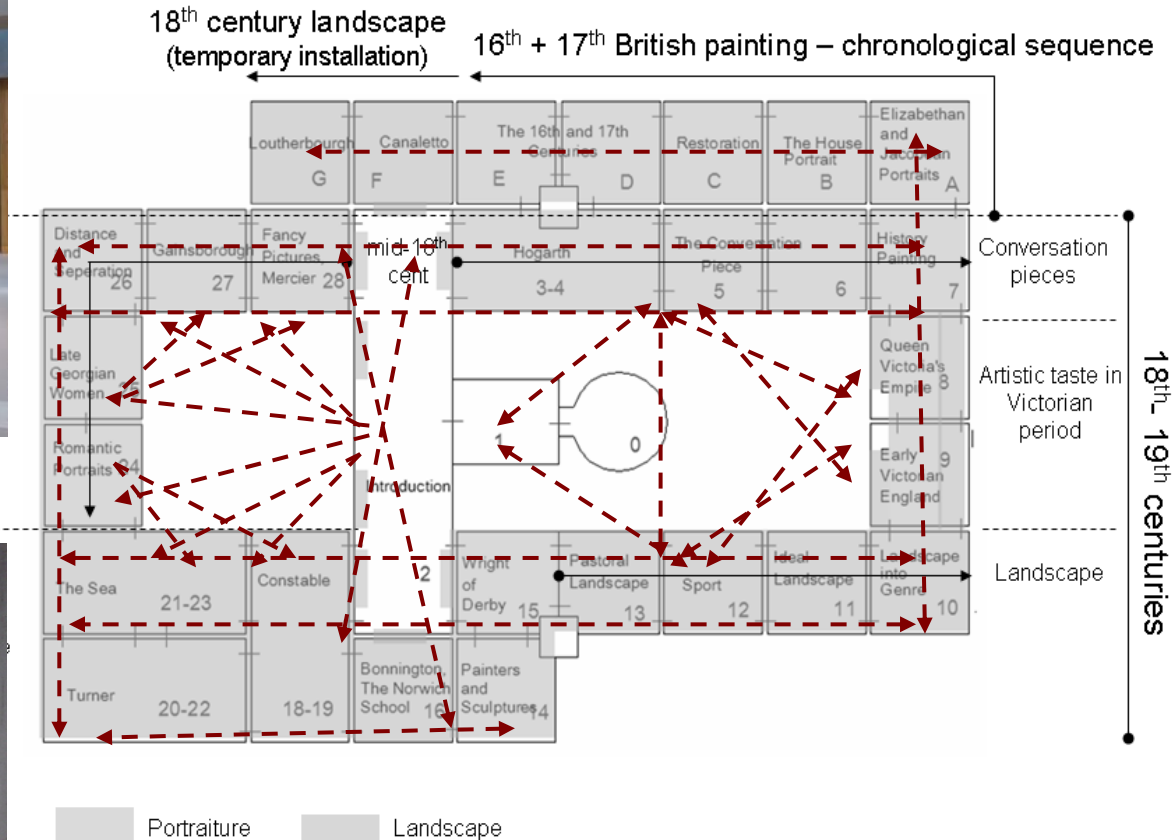
## Visibility through rooms





# How does gallery space exposes displays to visitors?

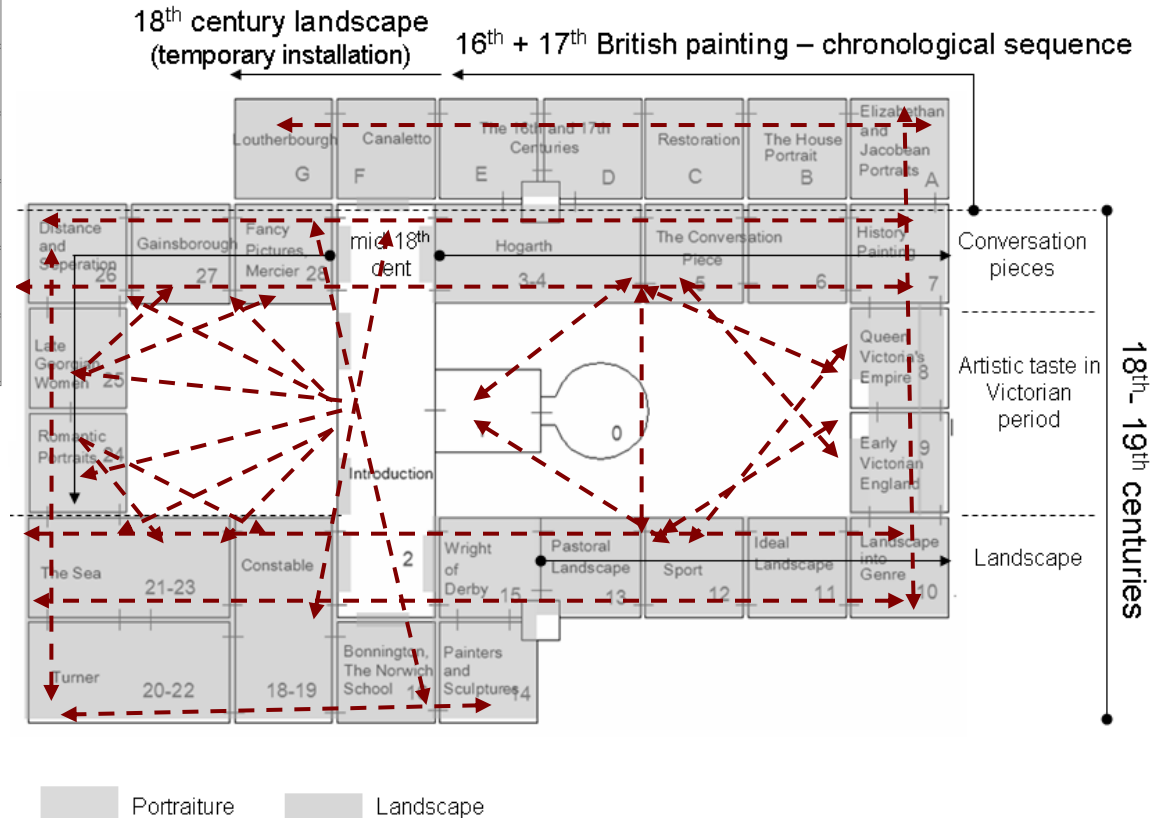
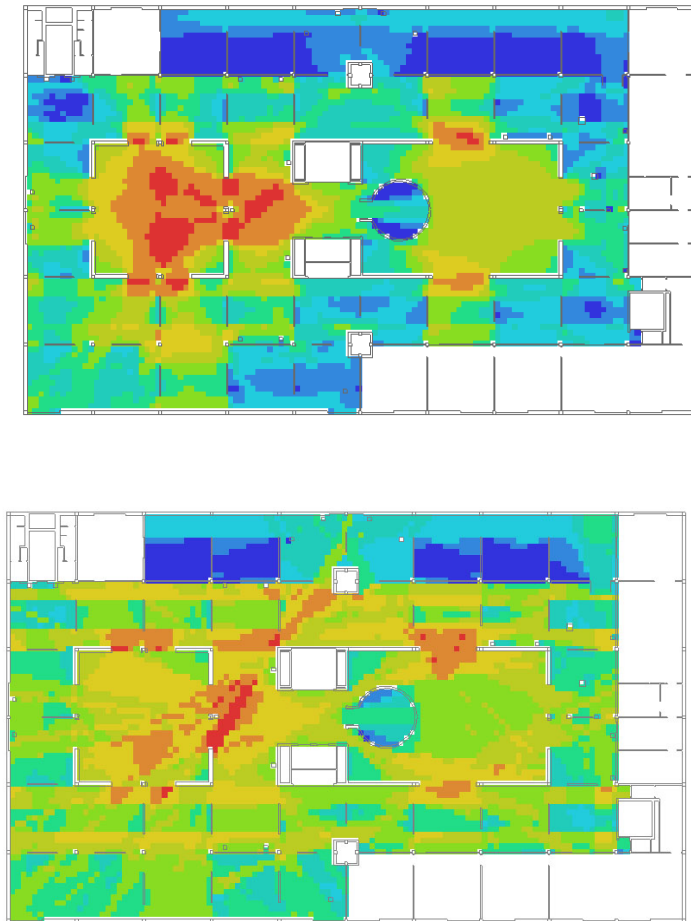
## The Yale Center for British Art



Visual interconnectivity among the display groups:  
*Opportunities to visually compare the displays in multiple ways at a global level.*

# How does gallery space exposes displays to visitors?

## The Yale Center for British Art

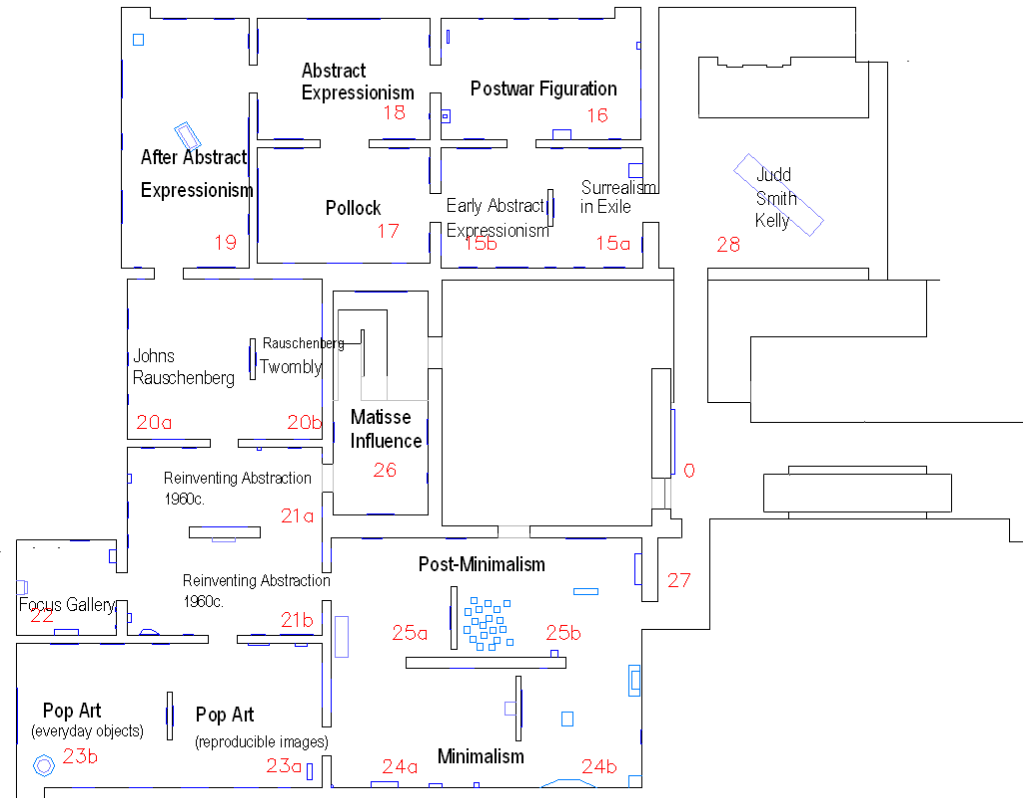


### Visibility relationships at global level:

*Aids the recognition of alternative dialogues between display groups in addition to its scholarly interpretation*

# Exhibition Content Presentation in the Gallery Layout

## The Museum of Modern Art-New Extension



### Exhibition content:

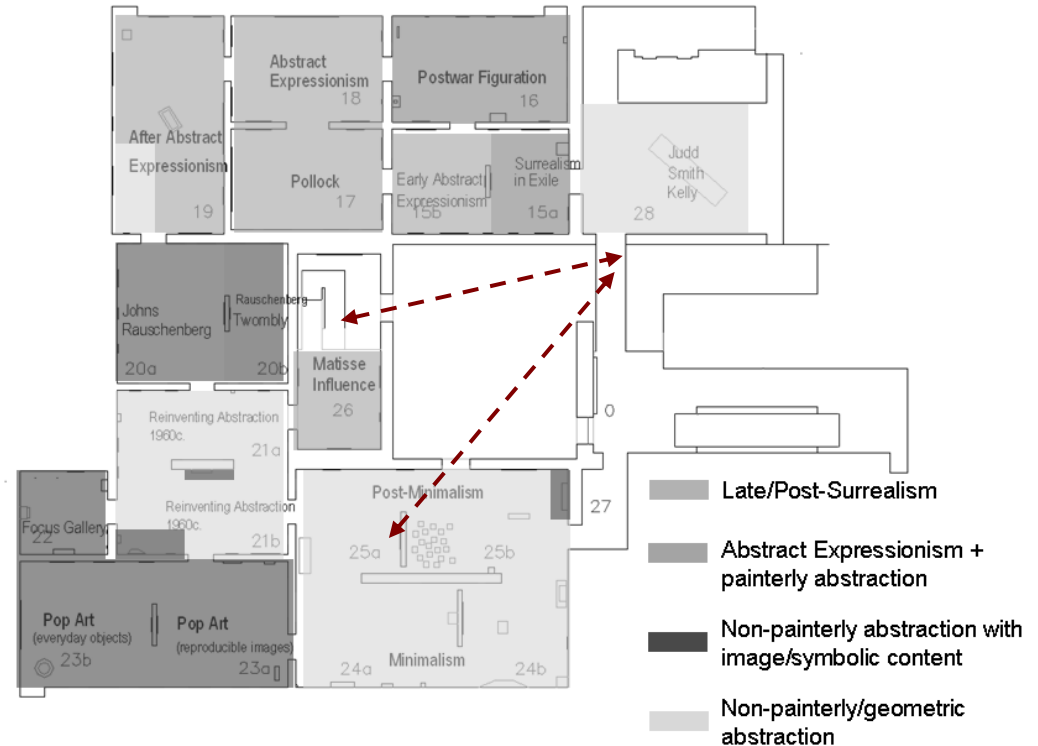
Late Modern and Pre-contemporary Art between 1940-1970s

### Curatorial interpretation:

Scholarly appreciation on the basis of Alfred Barr, Jr.'s legacy

# How does gallery space exposes displays to visitors?

## The Museum of Modern Art-New Extension



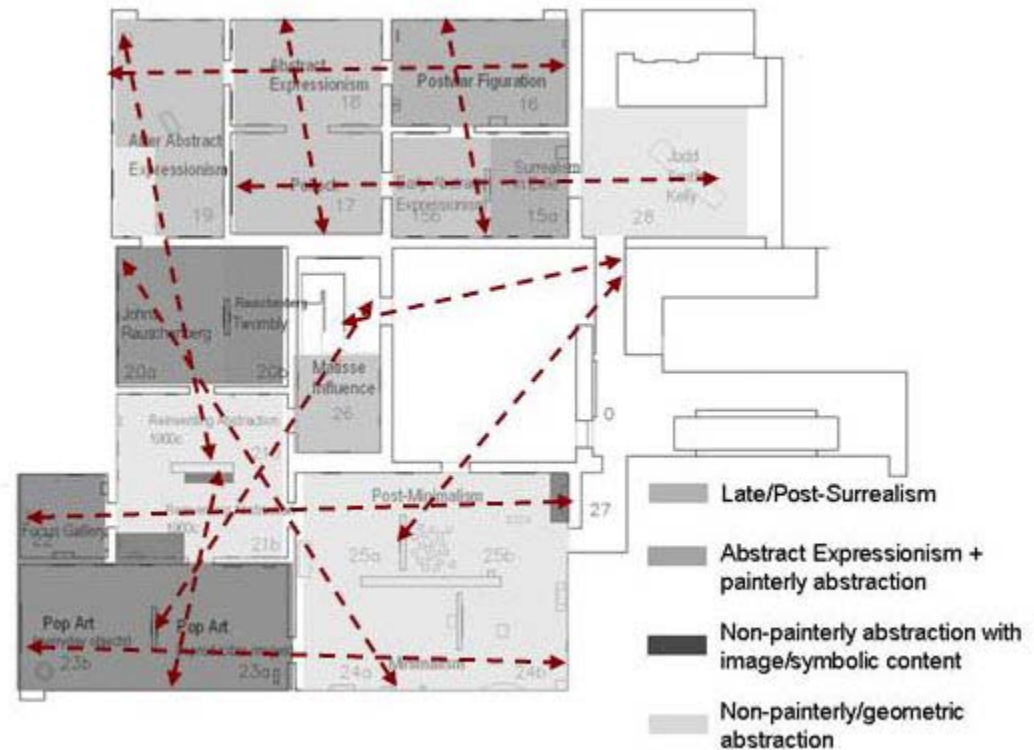
Visual connectivity through atrium

Connecting galleries with circulation areas



# How does gallery space exposes displays to visitors?

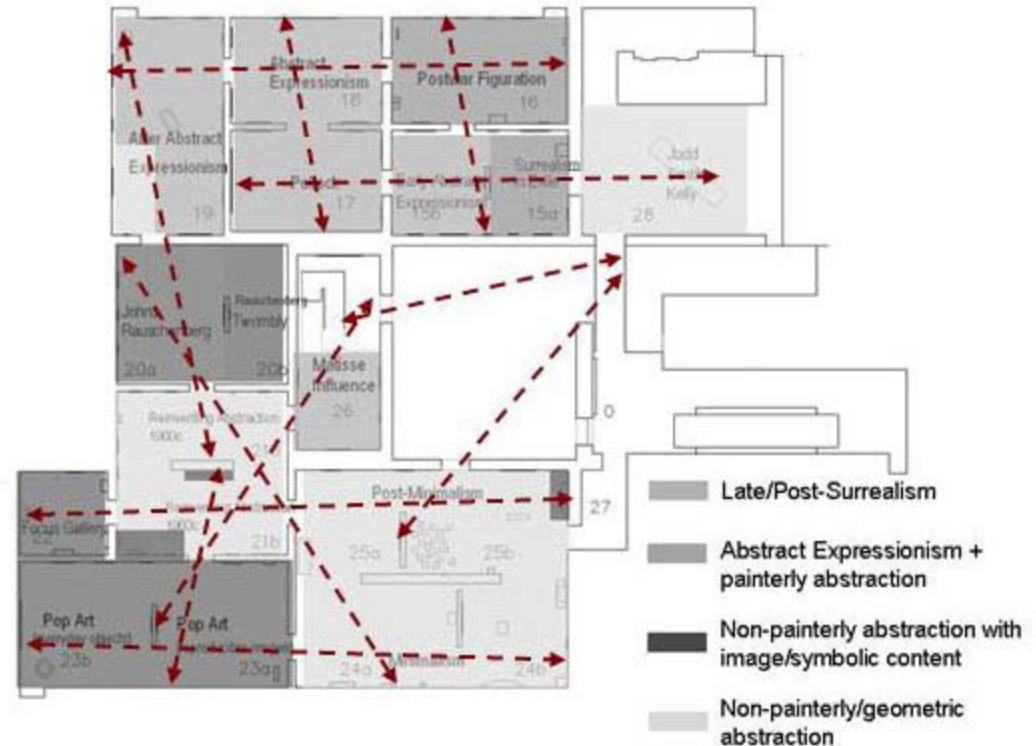
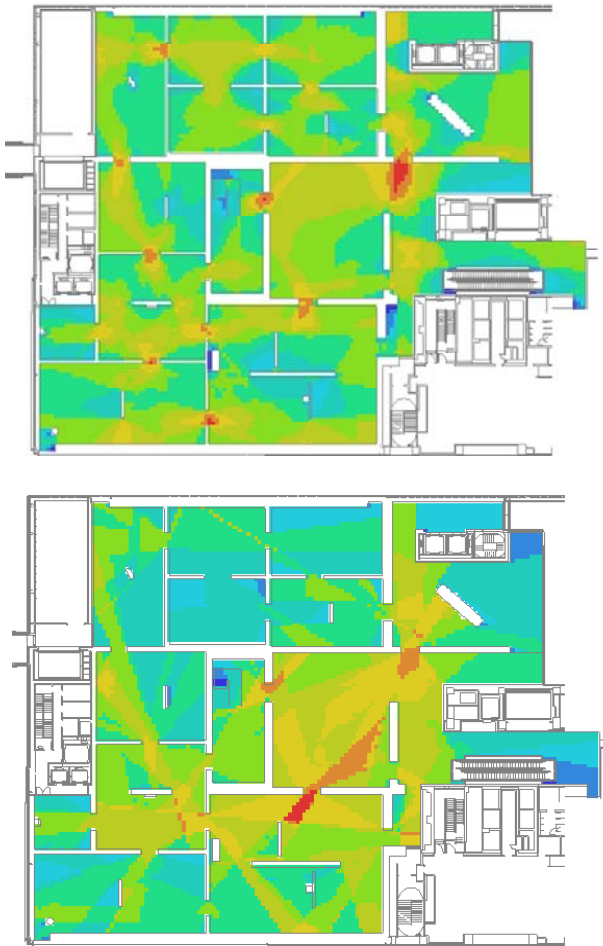
## The Museum of Modern Art-New Extension



Visual interconnectivity between rooms  
*Opportunities to visually compare the displays in the adjacent rooms*

# How does gallery space exposes displays to visitors?

## The Museum of Modern Art-New Extension



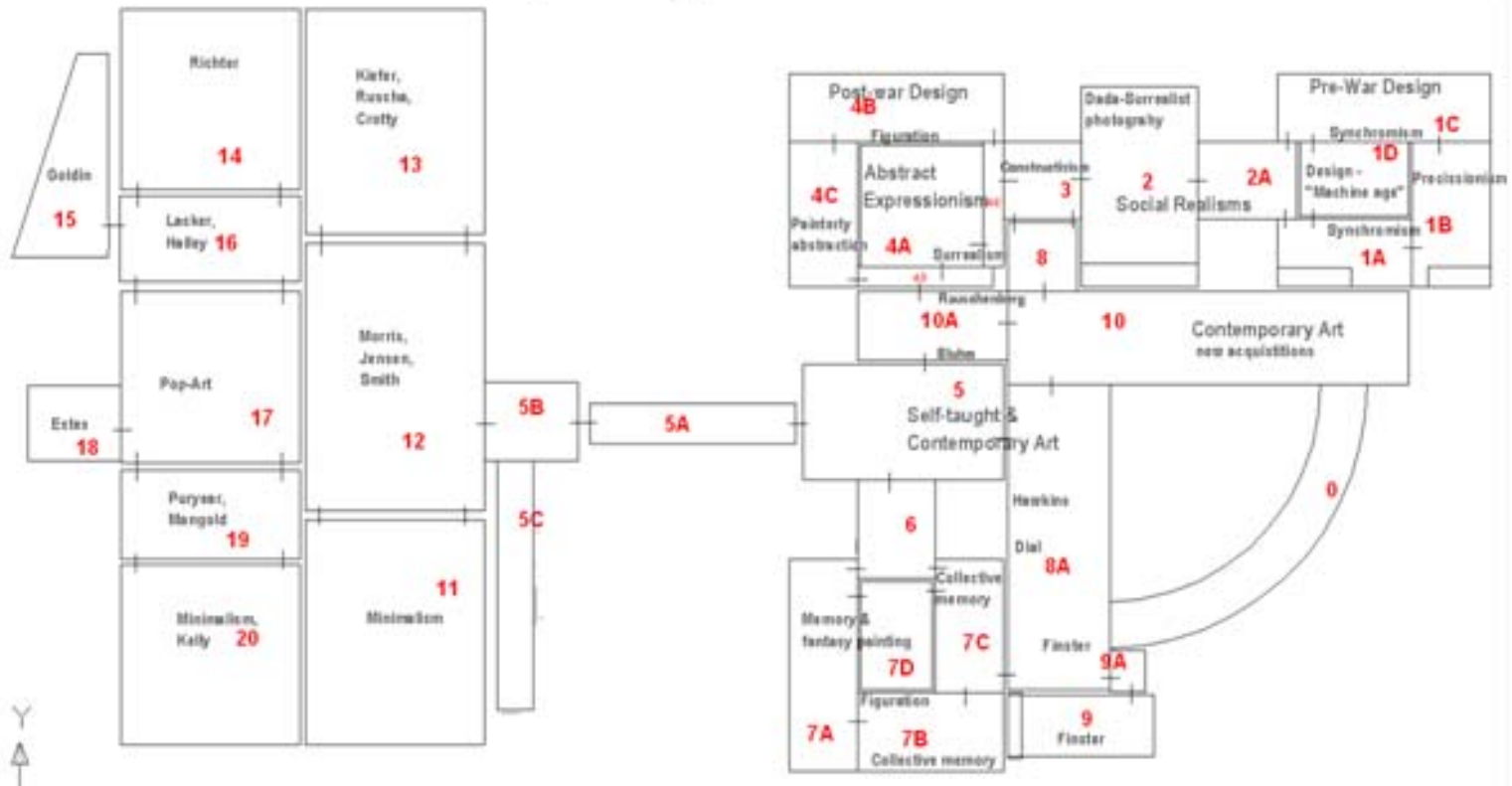
### Visibility relationships at local level (adjacent rooms):

*Aids the recognition of complex relations between modern movements*  
*Affording the contrasts and complexities in the narrative*



# Exhibition Content Presentation in the Gallery Layout

## The High Museum of Art- with Extension wing



### Exhibition content:

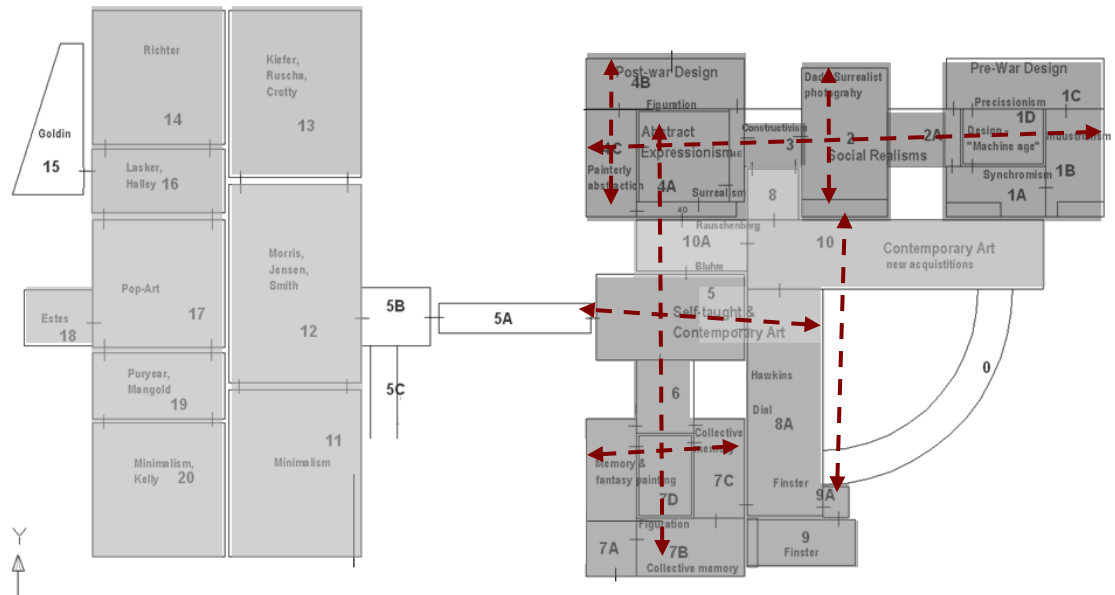
Twentieth century American Art  
(Modern, Self-taught and Contemporary)

### Curatorial interpretation:

Exploring the dialogues and affinities between the three genres

# How does gallery space exposes displays to visitors?

The High Museum of Art- with Extension wing

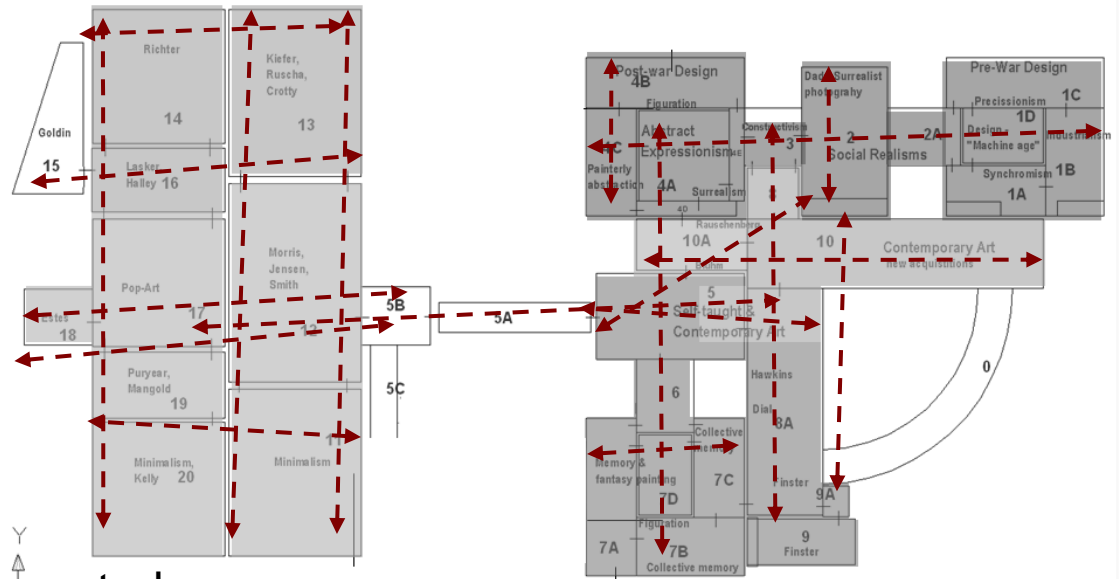


Visual interconnectivity adjacent rooms

*Opportunities to visually compare the displays at local level*

# How does gallery space exposes displays to visitors?

## The High Museum of Art- with Extension wing

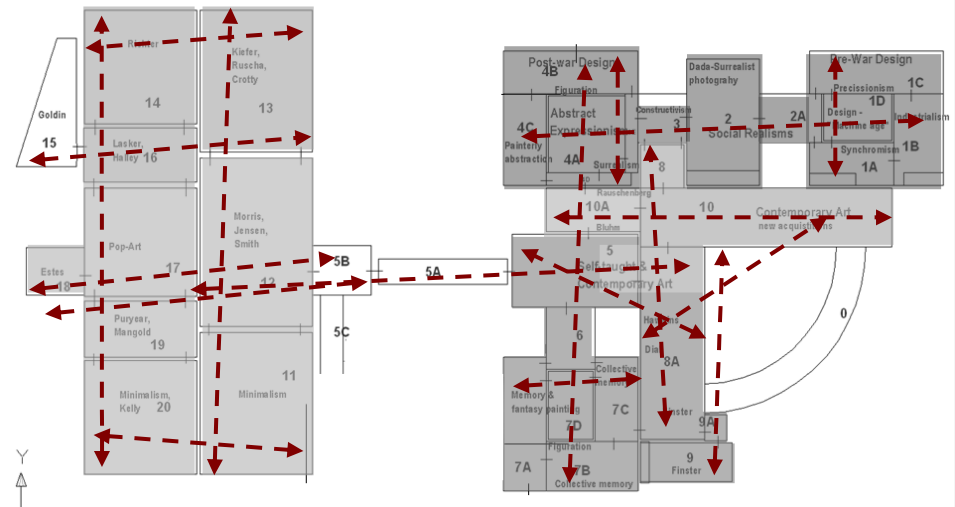
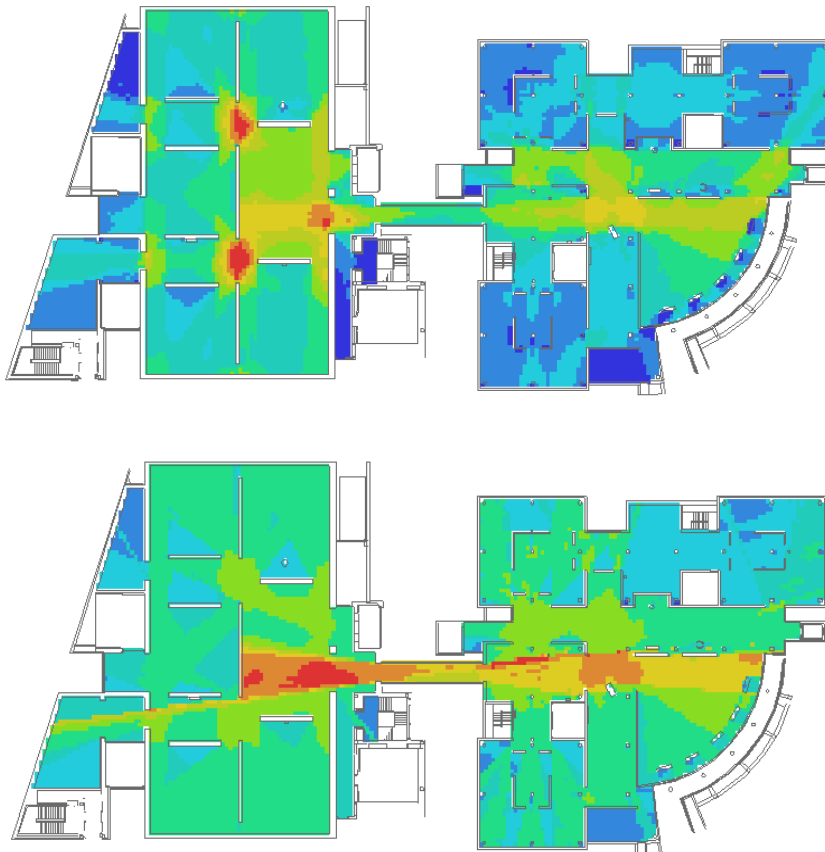


Visual interconnectivity along the central core

*Opportunities to view displays from distance and to compare works of three different genre on the surface*

# How does gallery space exposes displays to visitors?

The High Museum of Art- with Extension wing



## Visibility relationships at local and global level:

*Aids to read affinities between displays at a distance and in-closer view*





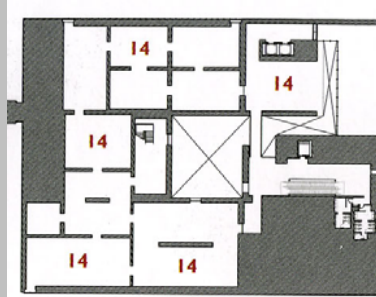
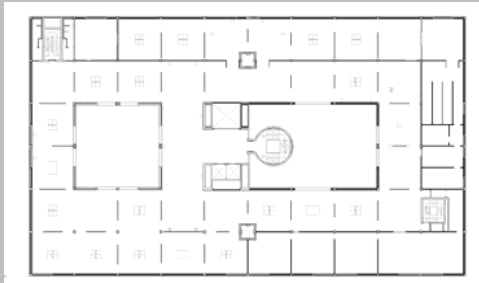
# How do design decisions on visibility relationships shape visitors' space-usage ?

- Explorative movement
- Viewing displays
- Surveying the gallery space





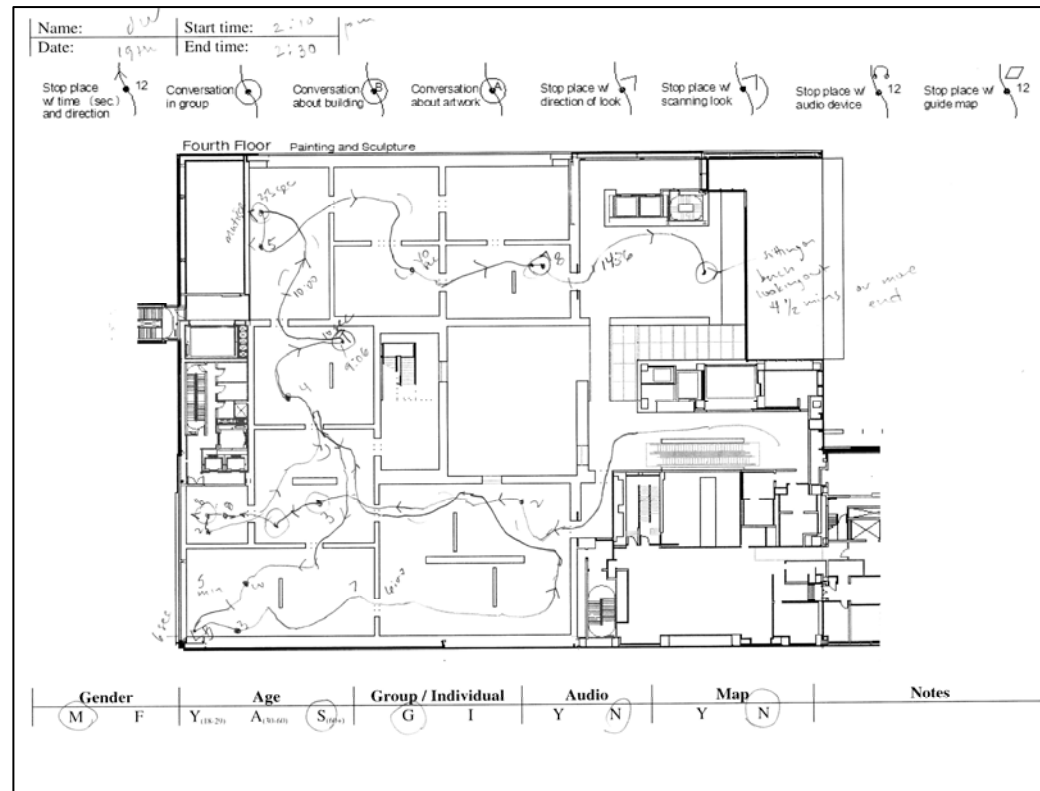
## Observations of Visitor Behavior



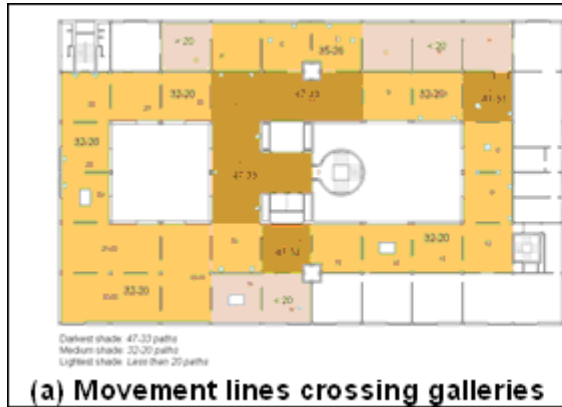
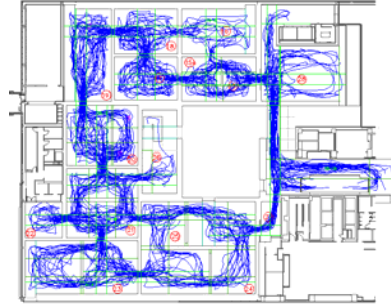
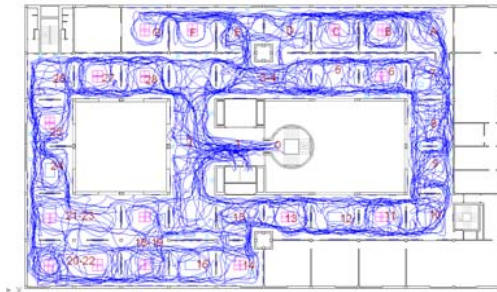
**Data Collection=** Tracking and timing 50 visitors in each museum

## Records of:

- *movement paths,*
- *places stopped to view displays*
- *places stopped to look around*



# Explorative Movement in the Galleries



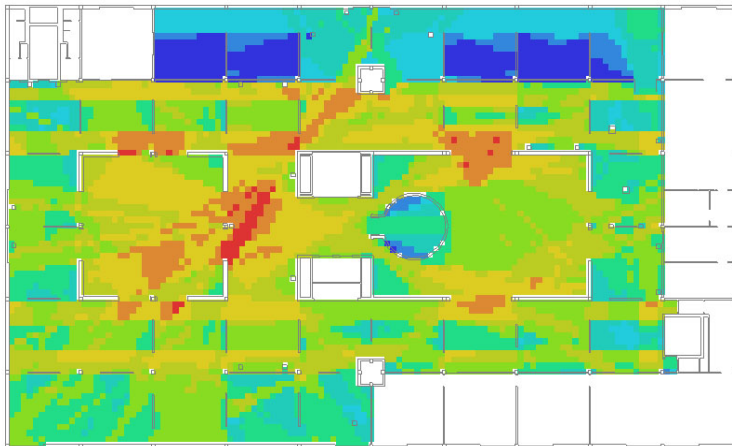
How does explorative behavior relate to visibility relationships in the galleries?

# Explorative Movement in the Galleries & Visibility in the YBCA



Explorative movement around atrium

(a) Movement lines crossing galleries



Closely linked with global visibility relationships

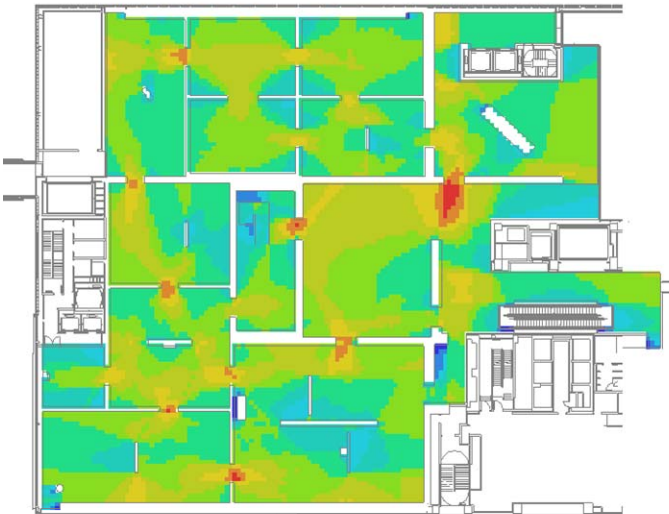
Global visibility

# Explorative Movement in the Galleries & Visibility in the MoMA



(a) Movement lines crossing galleries

Explorative movement in room sequence



Local visibility

Highly correlated with local visibility relationships

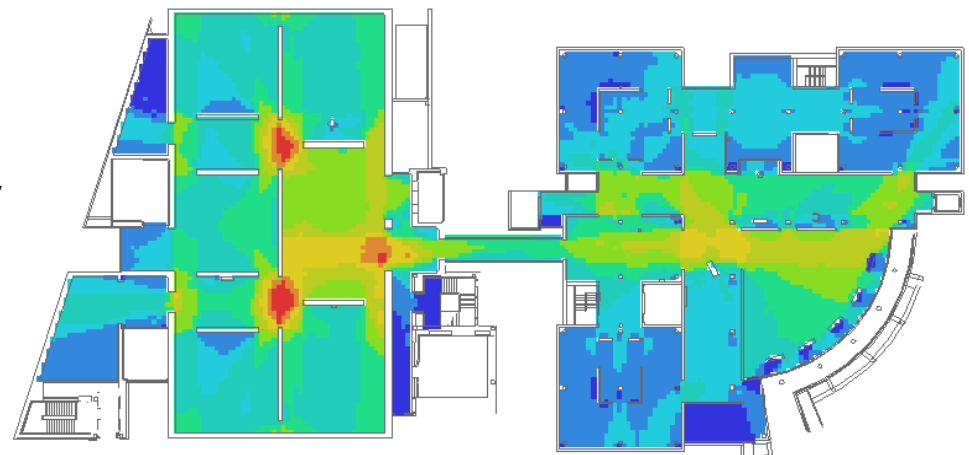
# Explorative Movement in the Galleries & Visibility in the HMA

Explorative movement along the central core connecting two wings



(a) Movement lines crossing galleries

Highly correlated with local visibility relationships



Local visibility

# Explorative Movement in the Galleries & Visibility in the Three Museums

## Results of Statistical Analyses:

**In the YCBA:** Global visibility predicts where visitors move through

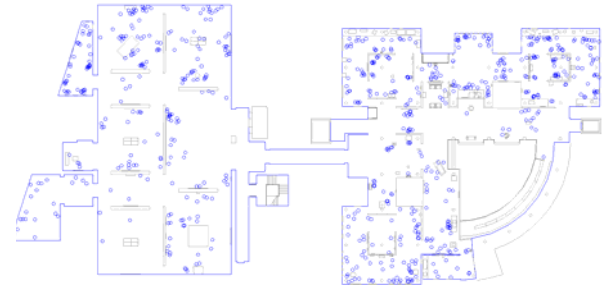
**In the MoMA:** Local visibility guides visitors in their explorations, visitors move through spaces where they can see neighboring locations

**In the HMA:** Local visibility is more influential on visitors' movement than global visibility

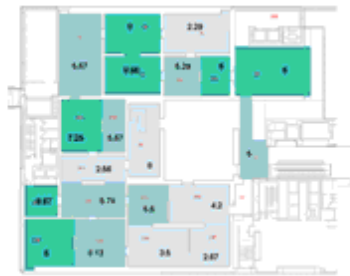
✓ Visitors are guided by best available levels of visibility during their explorations in galleries.



# Stopping to View Displays in the Galleries

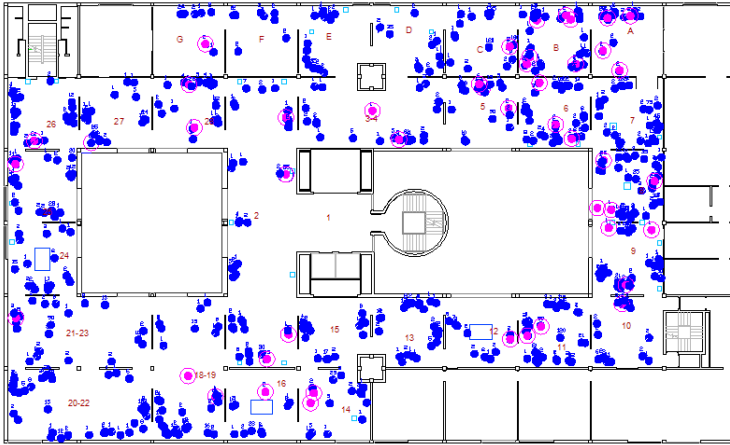


(b) Average stop counts per displays



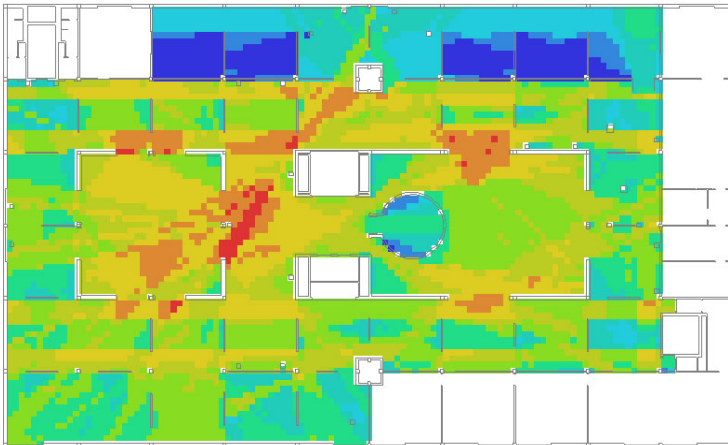
How does stopping to view displays relate to visibility relationships?

# Viewing Displays in the Galleries & Visibility in the YCBA



Frequent stopping to view displays in the rooms around atria + popular displays

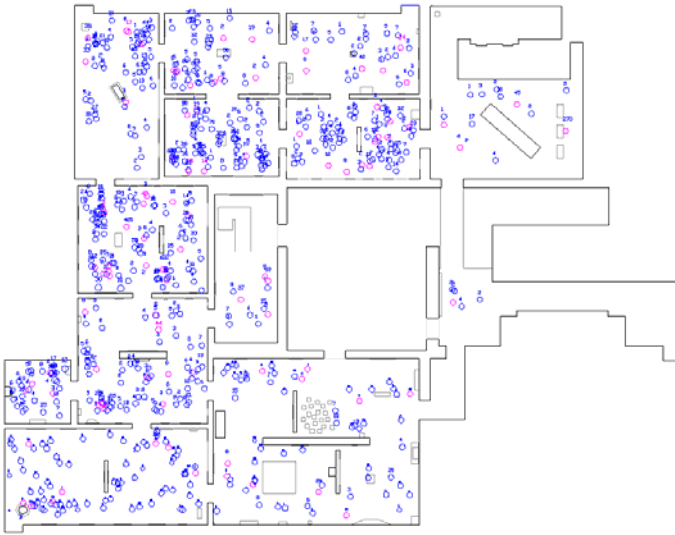
Stop counts viewing displays in each gallery



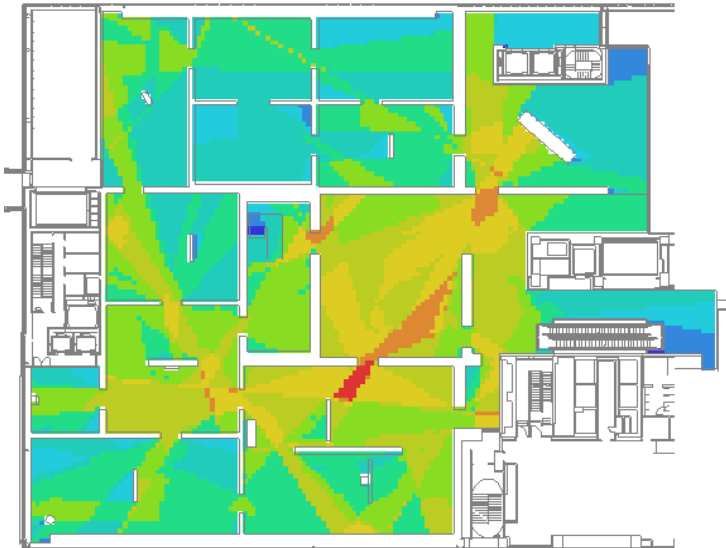
Viewing displays is linked with global visibility: visitors stop and view displays in the rooms that are visually close to every other room

Global visibility

# Viewing Displays in the Galleries & Visibility in the MoMA

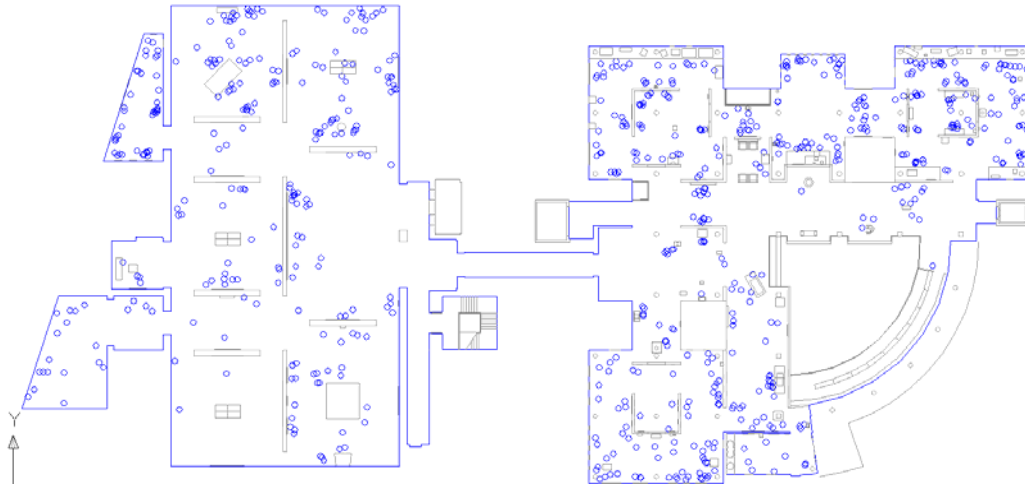


Frequent stopping to view displays around the popular displays

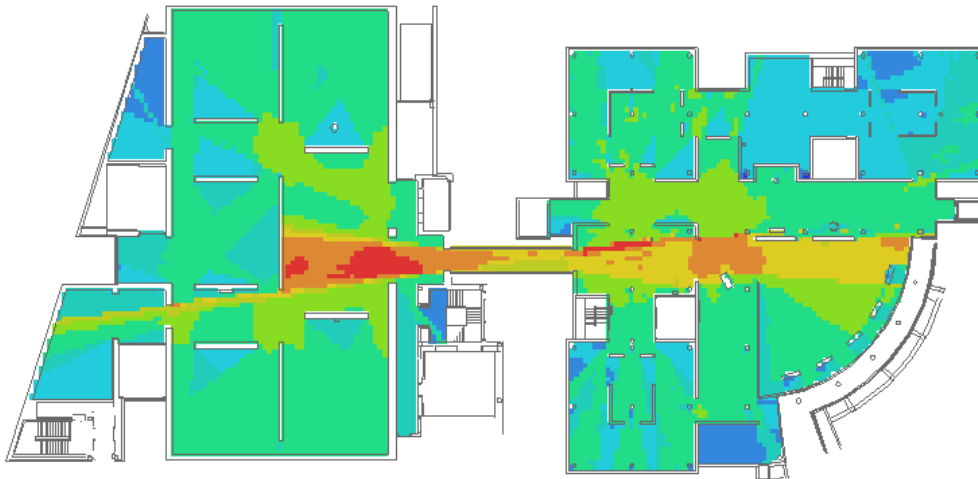


Viewing displays is **negatively** linked with global visibility: visitors stop and view displays in visually segregated rooms

# Viewing Displays in the Galleries & Visibility in the HMA



Frequent stopping to view displays in the galleries at the periphery



Viewing displays is **negatively** linked with local and global visibility: visitors stop and view displays in visually segregated and isolated rooms

# Viewing Displays in the Galleries & Visibility in the Three Museums

## Results of Statistical Analyses:

**In the YCBA:** visitors' stop and view displays in globally visible spaces

**In the MoMA and HMA:** visitors' stop and view displays in visually segregated spaces

✓ Most gallery spaces have poor global visibility in the MoMA and HMA



# Viewing Displays in the Galleries & Visibility in the Three Museums

- ✓ Absence of global visibility information shifts the attention from exploring layouts to focusing on displays.
- ✓ In MoMA and the HMA, visitors behavior of viewing displays are dissociated with explorative movement: galleries are like destination points
  - Popular paintings are in visually isolated places
  - Gallery partitions obscure the visual information beyond the confines of the visited rooms



# Behavior of Surveying the Galleries & Visibility in the Three Museums

## Results of Statistical Analyses:

**In the YCBA:** atria spaces motivate visitors to stop and look around, and retain their sense of orientation

**In the MoMA:** visitors stop and look around only when global visibility is available through atrium openings

**In the HMA:** visitors stop and look around only when they can see neighboring locations

- ✓ In YBCA, experiencing architecture, and explorative movement and viewing displays are synergized.
- ✓ In MoMA, experiencing architecture, and explorative movement and viewing displays are dissociated. Architecture is an independent entity in museum visit experience.

# Behavior of Surveying the Galleries & Visibility in the Three Museums

- ✓ In YBCA, experiencing architecture, and explorative movement and viewing displays are synergized.
- ✓ In MoMA, experiencing architecture, and explorative movement and viewing displays are dissociated. Architecture is an independent entity in museum visit experience.



# Take-Away Lessons

✓ High levels of visual interconnectivity between central and peripheral parts of the galleries afforded by,

Central location of atria spaces

Several atria openings to galleries

Gallery partition exposing visual information of adjacent locations

❖ **Synergize different patterns of space-usage, integrates the experience with art and architecture**

❖ **Allows opportunities for visually comparing in multiple ways, relaxes restrictive viewing sequences, adds value to didactic purpose**

# **Take-Away Lessons**

## **General Objectives of a Museum Design**

1. Gallery space should motivate focused viewing and good levels of orientation.
2. Motivate visitors' exploration, and facilitate them to visit as many galleries as possible.
3. Support curatorial goals of the museums: less restrictive presentation allowing alternative interpretations.

## **Design Decisions**

**Atrium space or central core that is highly connected to gallery space**

**Room partitions allowing visitors' vista to farther locations in gallery space**



# Take-Away Lessons

## **Some other objectives of a museum design:**

Gallery space should motivate focused viewing only and eliminate distraction

Motivating visitors' exploration only in selective parts is okay

Support curatorial goals of the museums: more didactic presentation dictating viewing sequence

## **Design Decisions 2 :**

- Atrium space or central core spaces can be only open to the circulation areas
- Gallery rooms can be designed as destination points, partitions provide focused viewing
- To retain sense of orientation, visitors should be given opportunity to project sight to farther locations at the mid point of their itinerary

# Thanks!!

Questions?

Ipek Kaynar Rohloff

[ipek@kaynar-rohloff.com](mailto:ipek@kaynar-rohloff.com)

Slides and other material available from:

[www.kaynar-rohloff.com](http://www.kaynar-rohloff.com)

# Credits

- Special thanks to my doctoral thesis advisors Jean D. Wineman and Sophia Psarra

## Photo credits:

- Interior view of the MoMA in slides 4, 26: Sophia Psarra
- Interior view of the MoMA in slides 17, 18: Rachna Lal
- Photos of the MoMA in slides 8, 9: Lowry, Glenn (2005). *The New Museum of Modern Art Worldwide*: Thames and Hudson.
- Photos of the YCBA in the slides: Ipek Kaynar Rohloff
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