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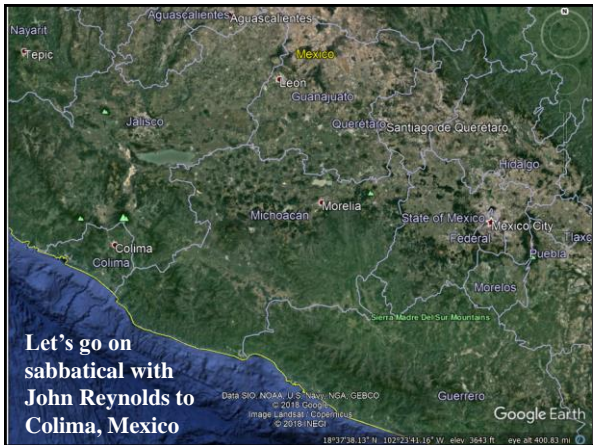
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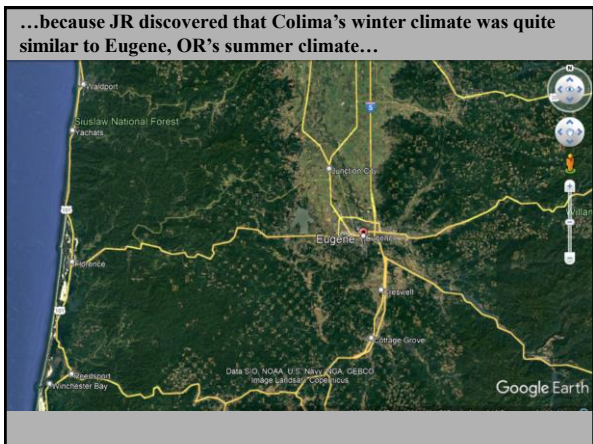
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**LOS ATRIOS DE COLIMA**

## The Courtyard Study Matrix

<b>A</b>		<b>A. No vegetation</b>
<b>B</b>		<b>B. Potted plants</b>
<b>C</b>		<b>C. Vines and plants</b>
<b>D</b>		<b>D. Trees</b>

Jardín Nunez, Colima

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**LOS ATRIOS DE COLIMA**

**Shallow      Medium      Deep**

**Central Colima  
(count the courtyards!)**

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**LOS ATRIOS DE COLIMA**

<b>A</b>	<b>A1</b>	<b>A2</b>	<b>A3</b>
<b>B</b>	<b>B1</b>	<b>B2</b>	<b>B3</b>
<b>C</b>	<b>C1</b>	<b>C2</b>	<b>C3</b>
<b>D</b>	<b>D1</b>	<b>D2</b>	<b>D3</b>

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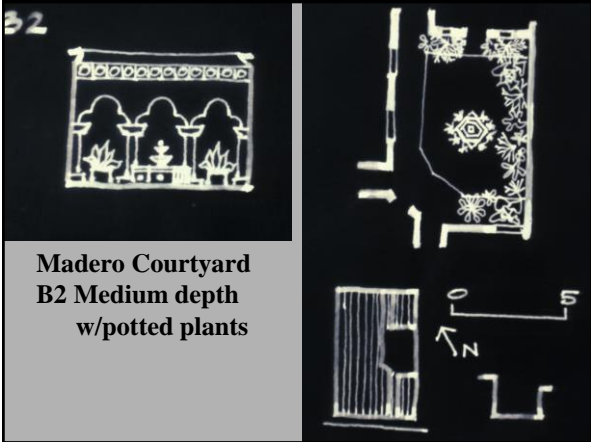
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**Madero Courtyard  
B2 Medium depth  
w/potted plants**

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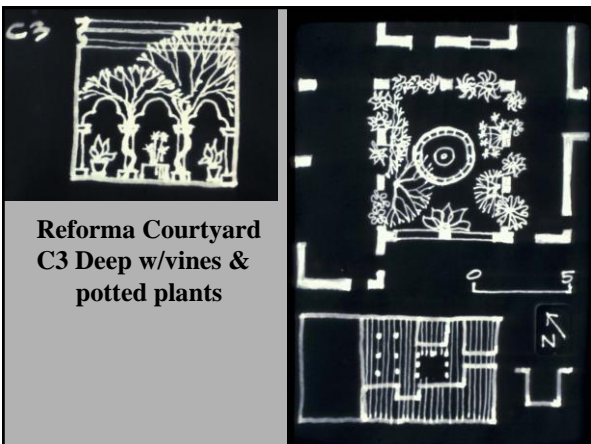
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**Reforma Courtyard  
C3 Deep w/vines &  
potted plants**

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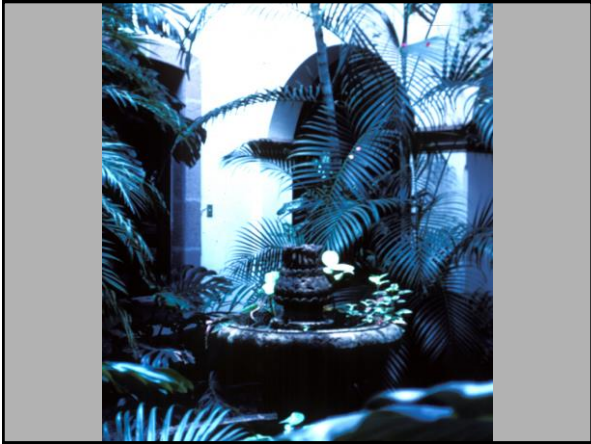
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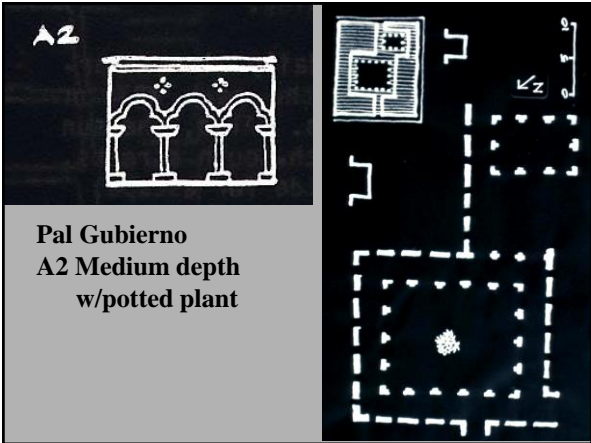
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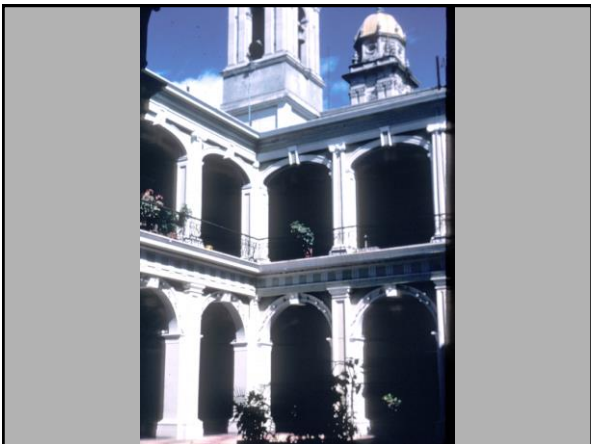
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**Time to Vote**

Which Courtyard is the most effective in providing passive cooling to its surrounding building?

- B-2 Madero Courtyard
- C-3 Reforma Courtyard
- A-2 Pal Gobierno




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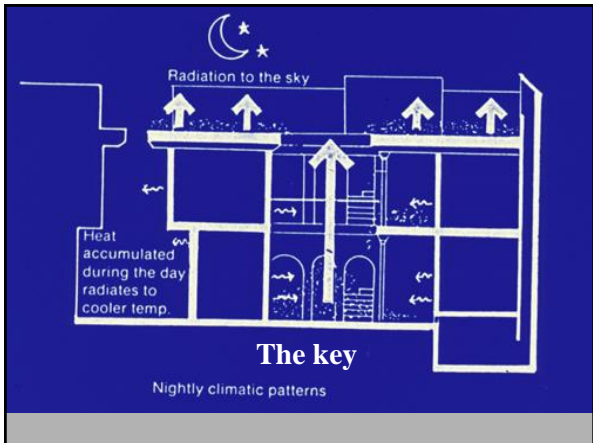
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For temperate climates courtyards use toldos:



Atrium



Toldos

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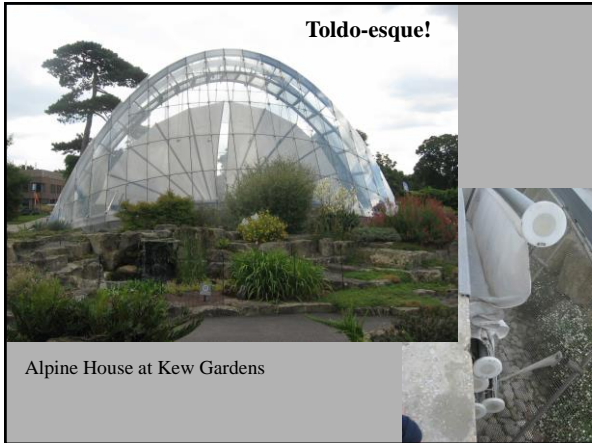
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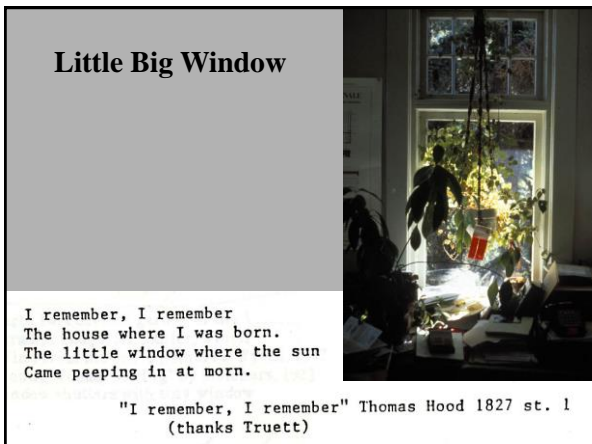
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AAS 1984



Chuck Horgan

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Economy of Means



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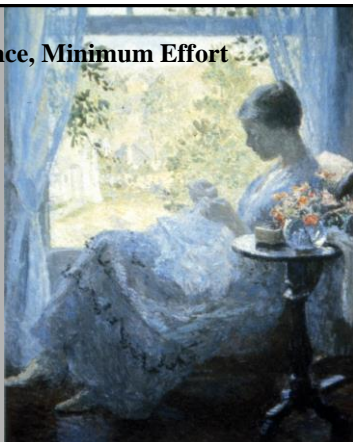
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Maximum Experience, Minimum Effort



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**Environment as Design Innovator**



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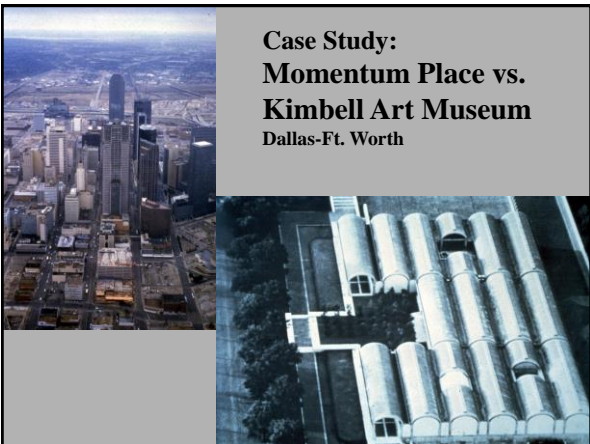
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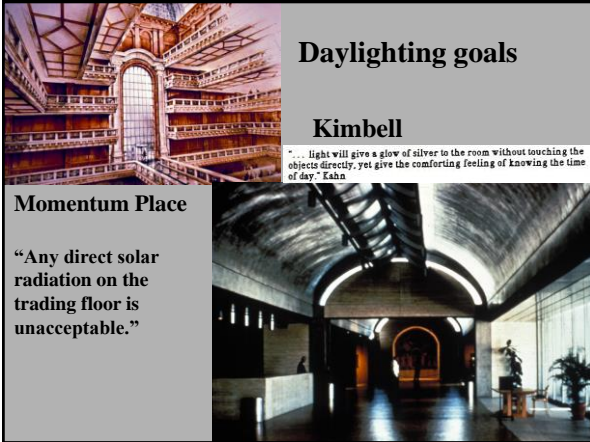
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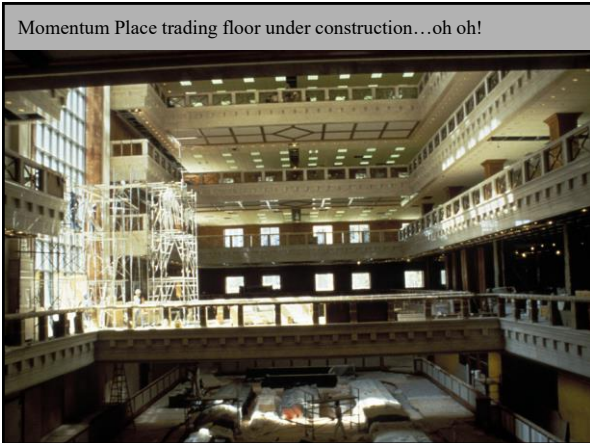
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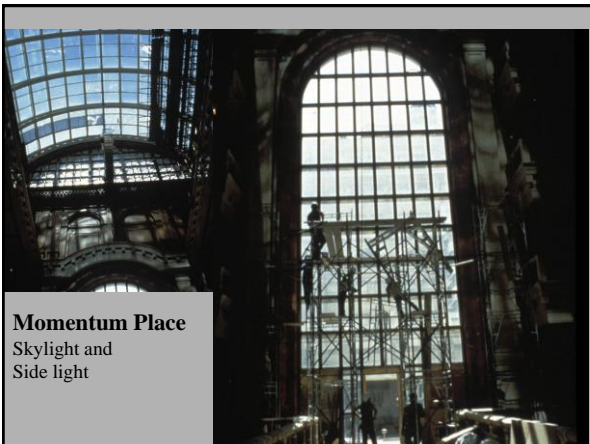
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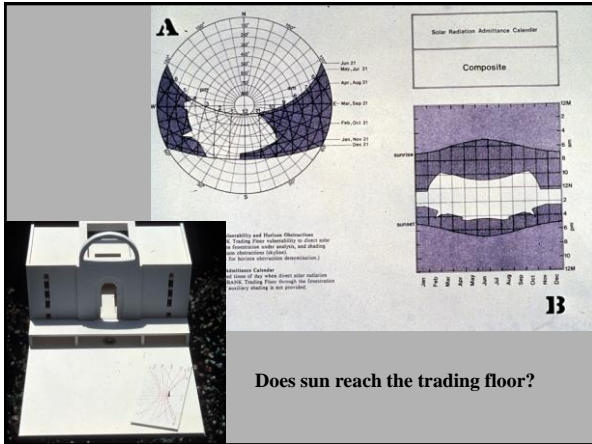
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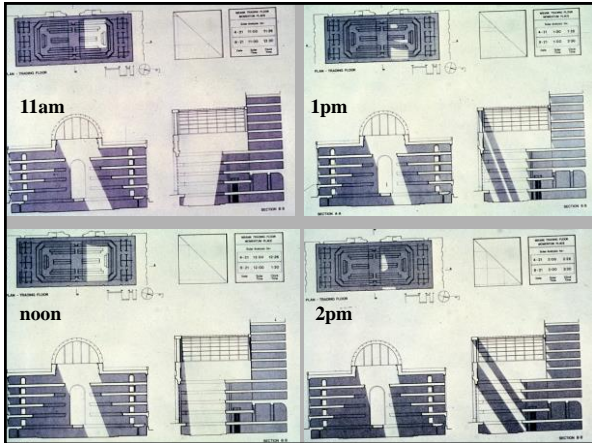
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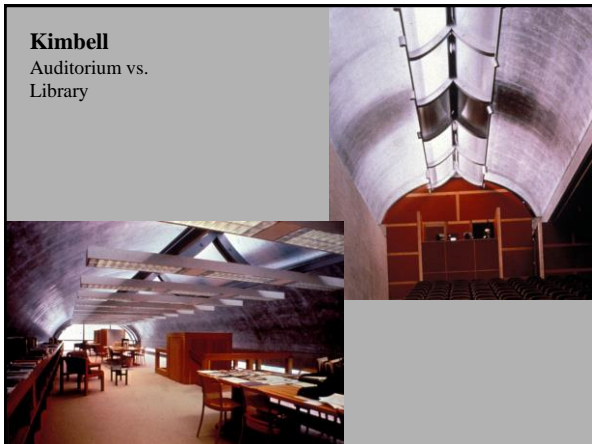
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## Barrel Vaults

**Momentum Place**  
Glass roof, glass wall

**Kimbell**  
Slit skylight, eyebrow windows



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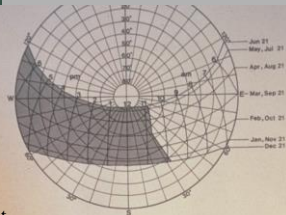
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**Momentum Place**  
Law Library in East-Facing Vault  
with Opaque Roof



The diagram indicates those periods when the library opens its windows to transmitted solar radiation. The vault, decorative grill, and framing for the glazing system provide solar radiation cutoff at profile angles greater than 76.5° and azimuth angles between 3°W of glazing surface facing 0 184° E.

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8 am



9 am



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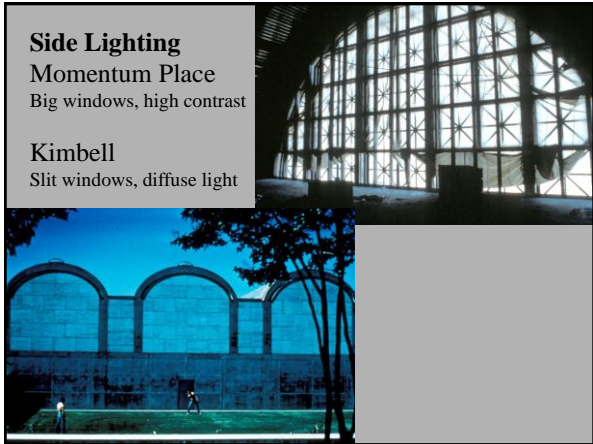
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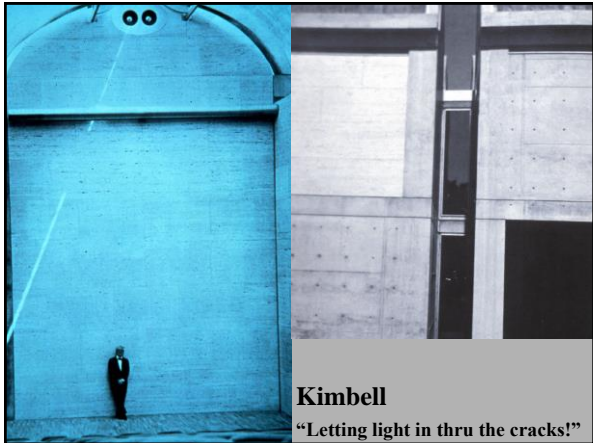
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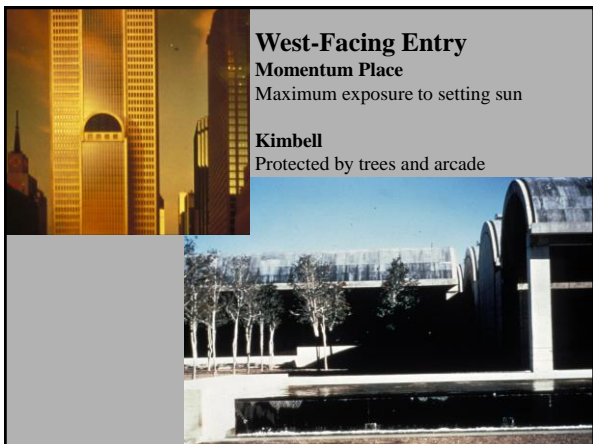
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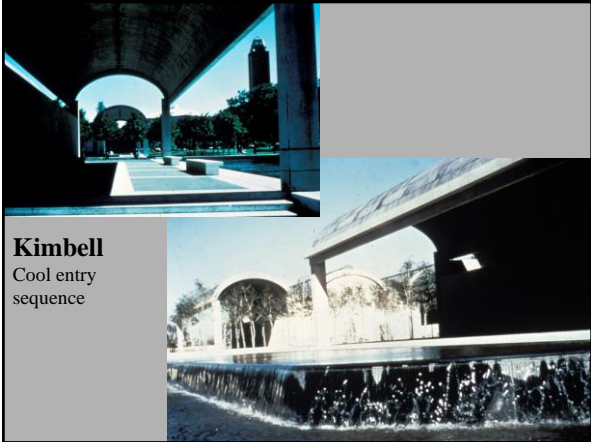
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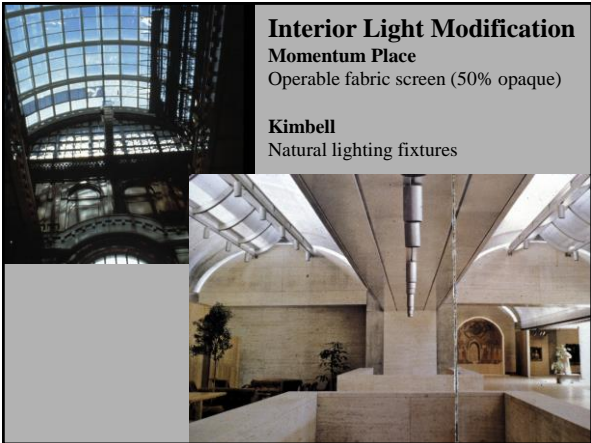
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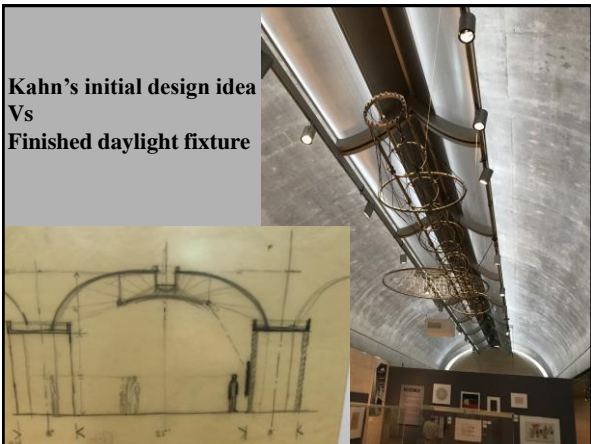
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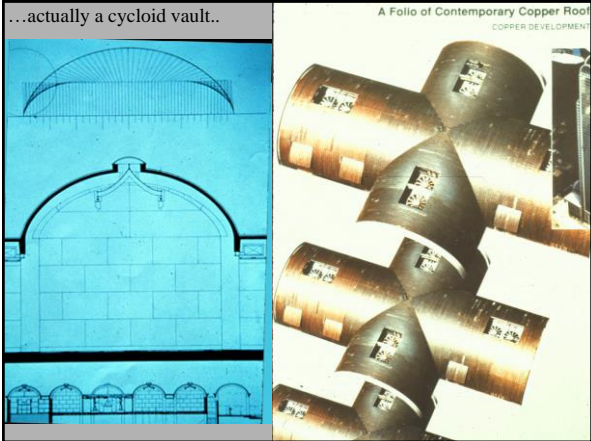
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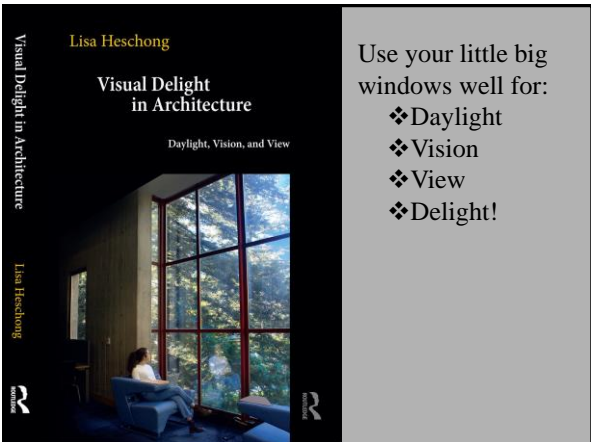
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