

Arch 464  
ECS  
Spring 2008

Name \_\_\_\_\_

Quiz #3

## "Can a Glass Box Be a Green Box?"

**Read and look at everything before you write!**

For this problem you are a speculative architectural historian who is evaluating Philip Johnson's 1949 Glass House in New Canaan, CT, for its potential to become a modern sustainable home without compromising its aesthetic impact and pure form.

The house was built to its day's energy code (none), featured a brick-covered slab-on-grade. It has no insulation in walls, ceiling, or floor. All the windows, none apparently operable, are single-pane glazing. The large rural site slopes dramatically from the road on the east to the lake on the west.

"As an architect, Johnson made his mark arguing the importance of the aesthetic side of architecture, and claimed that he had no interest in buildings except as works of art. [Imagine how the history of the built environment would have shifted if the influential Johnson had also insisted that buildings have merit only if they were also environmentally responsible!—bth]

"The serene Glass House, a 56-foot by 32-foot rectangle, is generally considered one of the 20th century's greatest residential structures. Like all of Mr. Johnson's early work, it was inspired by Mies, but its pure symmetry, dark colors and closeness to the earth marked it as a personal statement, calm and ordered rather than sleek and brittle.

"In a famous lecture in 1954 at Harvard titled "The Seven Crutches of Modern Architecture," he said, 'Merely that a building works is not sufficient.' Later, in an oft-quoted remark, he said, 'I would rather sleep in Chartres Cathedral with the nearest toilet two blocks away than in a Harvard house with back-to-back bathrooms.'"

—The New York Times

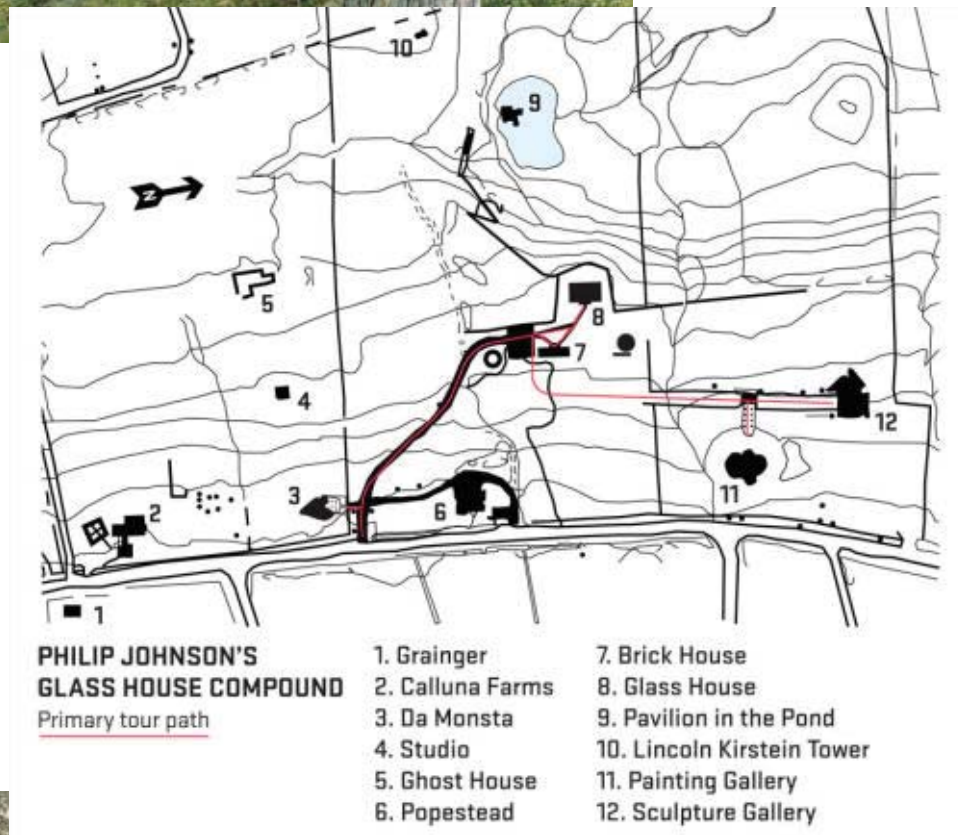


Illustrations from Metropolis Nov 2006 and can be viewed at [www.metropolismag.com](http://www.metropolismag.com).

November 2006 Metropolis cover (top), Scully and Johnson on site (middle), and the house from the southeast in autumn (bottom).



The glass house viewed from the southwest (top). The Johnson property site plan with the glass house as #8 and north to the right (middle). The glass house and brick house viewed from the northeast (bottom).



## Analysis

1. Given the building siting, orientation, and transparency point out **two** features of the design and site that have potential to highlight sustainable design and two features that are detrimental to sustainable design. **Fully explain** your nominations of these four features.

4 points

1

2

1

2



The glass house interior looking north (top), west (middle), and south (bottom).



4 points

## Improvements

2. Suggest **four** improvements to the building that would make it more sustainable and could be integrated with the existing site and building without compromising its aesthetics. **Explain** each of your suggestions. Use sketches and diagrams to make your intentions clear.

1

2

3

4



South elevation (top), view to the south (middle) and Johnson and his friends (including Andy Warhol and R.A.M. Stern) gathering in the glass house (bottom) {note the furniture and art arrangement!}.



## Site Energy

3. **Propose two** appropriate systems for generating site energy that would reduce the building's contribution to greenhouse gas emission and **show** how these can be integrated into the site and building design scheme.

2 points

1

2

### **Glass House History:**

**1940** Johnson entered Harvard to study architecture under Marcel Breuer and Walter Gropius

**1943** Received Bachelor of Architecture from Harvard University, Graduate School of Design

**1945** Began schematic design of the Glass House

**1945** purchased five acres in New Canaan, CT

**1947** Finalized design of the Glass House

**1948** Groundbreaking for the Glass House and Brick House

**1949** The Glass House and Brick House completed