

Arch 464
ECS
Spring 98

Name _____

Quiz #3

"Water in the Tower House II"

For this problem you are the water expert on a team collaborating on the design of a residence for an artist. The extremely tight urban in-fill site is only 12' by 40'. The artist wants the building to be symbolic of her commitment to conservation of natural resources and integrated systems.

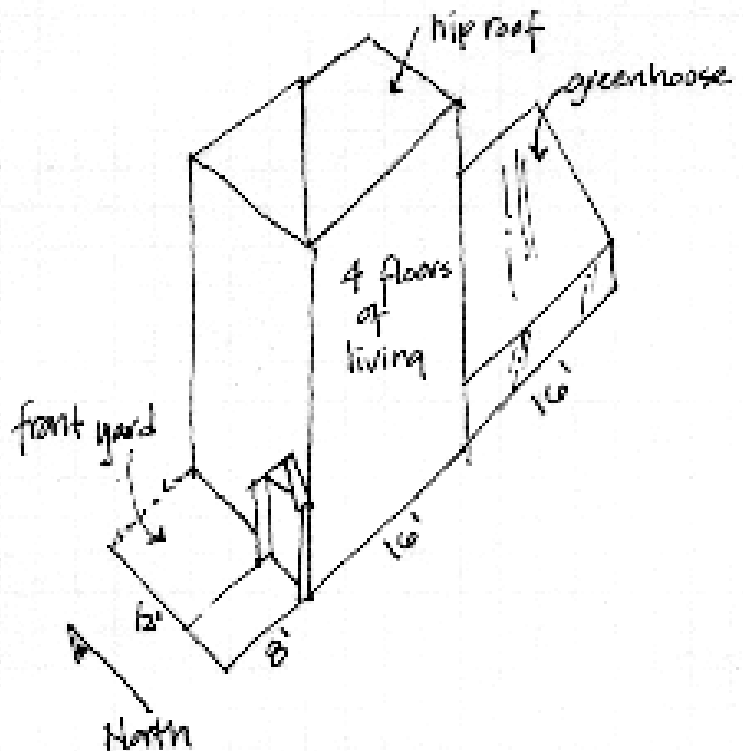
The design concept is to create a tower that is four stories tall with a full basement. A u-shaped stair will be located in the northeast corner diagonally from the entry. Each floor is 12' x 16'. The design team has worked out the program so that there are five single-story spaces:

1. Art Studio
2. Bedroom/Bathroom
3. Entry/Office
4. Kitchen/Dining
5. Living

The backyard is planned for a greenhouse that has full solar access from 9am until noon yearround. The roof also receives full sun all day all year.

Your input to the design process is to determine how water use and conservation could serve as an ordering principle for the design. City water and sewer lines are available. Consider using the following fixtures in the building:

- cistern
- kitchen sink
- dishwasher
- lavatory
- bath tub with shower
- toilet
- work sink
- front yard hose
- hot water heater
- solar panels
- storage tank
- constructed wetland



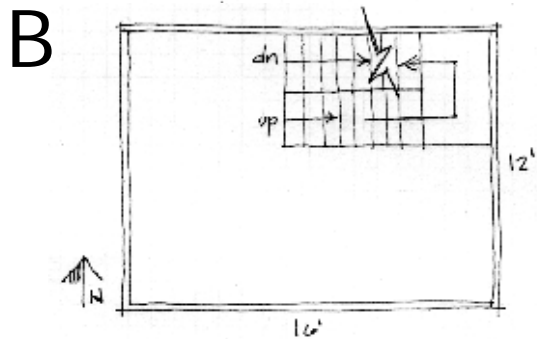
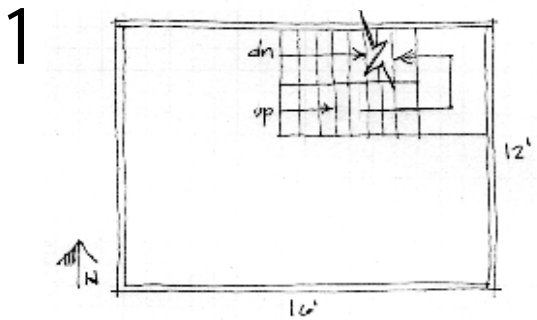
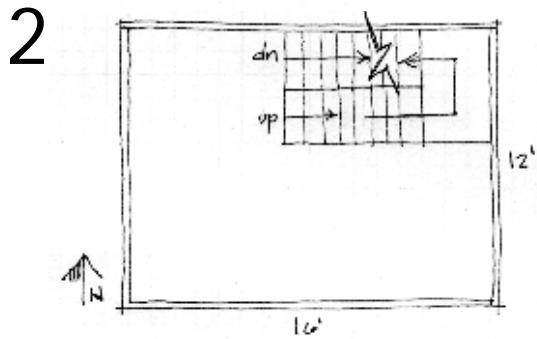
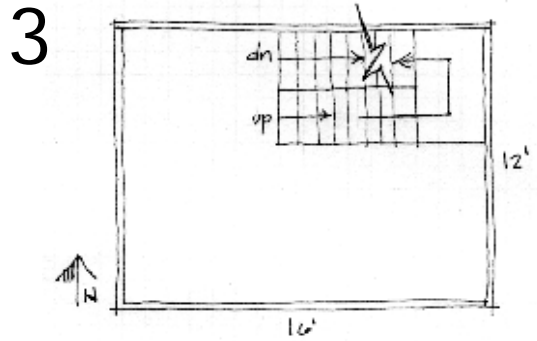
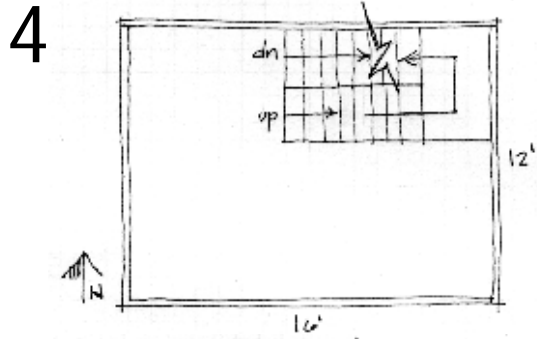
Phase I: Analysis

1. Give an overview of the strategies that are appropriate for conservation of water in this building. Explain how these strategies can be used to form a well-integrated water and waste system.

Phase II: Design

4 points

2. Give a floor-by-floor description of the spaces, their water use and conservation techniques, and your physical design.



3. How can the greenhouse and the front lawn be designed to augment and complete the integrated system of the building?

4 points

