

4.401/4.464 Environmental Technologies in Buildings – Assignment 1

Instructor:

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Due Date:

Friday of week 2

Note:

This is an individual assignment.

My Energy Essay

Over the past decade environmental, 'green' building technologies have enjoyed unprecedented attention from building owners, the general public and design practitioners. As a consequence, today's architects are under increasing pressure to position their built work within this context. A convenient and popular method is to evaluate one's built work via building rating systems such as LEED in the US, BREEAM in the UK and CASBE in Japan. However, as we will see in class, this approach neither guarantees satisfying results nor does it give full justice to the larger societal debate on sustainability and the built environment. In this first assignment you are invited to reflect about your past and envision your future building energy use.

Task 1: Your past energy use

Pick an apartment or house in which you have lived in the past for which you have access to annual energy bills for electricity, gas, oil etc. Estimate the floor area of the living unit and (same as in class) calculate the energy use intensity of the living unit, overall building energy use per person and carbon emissions per person. Comment on your findings.

Task 2: Essay – A sustainable building that suits your lifestyle

Write a position paper (about 1000 words) on what you – as a becoming designer – believe constitutes a successful sustainable building. To give your argument a personal note and make it thus more convincing, please initially describe the following: If everything goes "according to plan" for you, where and how would you like to live in 10 years? In the countryside, the suburbs, a city? Do you want to live in a new single family house, an apartment, a retrofit, a commune? How much traveling do you see yourself doing for work

and pleasure (number of miles traveled per year via car, air and/or train)? How would you like to work? From home, in an office, at Starbucks, in your garage/makerspace?

Please describe a sustainable building that accommodates your lifestyle choices. Feel free to use architectural precedents, anecdotes and any type of data to substantiate your writing. The rating criteria for this assignment are the originality of your thoughts and cohesiveness of your writing. Be prepared to measure your final course project against the criteria that you present in this first assignment.

Note: This is an open assignment. Given that sustainability is such an all-encompassing term, the idea is for you to describe how you aspire to live and what type of buildings can satisfy those desires. There are no right or wrong answers and you are not expected to provide a review of sustainable technologies in buildings. We will be covering that in class.

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