

Passive and Daylighting Design

Assignment #3—The Building

Due: October 25th, 9:00 am

The remainder of the term is to be spent designing a simple building that is completely energy independent. That is to say, no fossil fuels can be used to operate the building, so passive design techniques must be used to ensure human comfort.

The program is for a small exhibition building displaying your favorite work of art. The choice of the piece is up to you, but please keep in mind that the climate control is dependent upon ambient conditions, and your skill, so you might want to steer clear of housing a friable Rembrandt sketch or Marc Qunn's Blood Head.

You are to design not only the building but modifications to the site to meet the needs of comfort, dignity and the architectural concept.

Project: Exhibition Building. Please note that this project is to be undertaken ***independently*** (in other words not in groups)

Program: The building footprint is to be approximately 150sm, and include all necessary spaces (exhibition room, lobby, washroom, service room, etc)

Deliverables:

- 1. Site Plan (and site plan analysis)
- 2. Building Plan
- 3. Building Sections (and lighting broad analysis)
- 4. Perspective Sketches

Project Model (*maquette*)

A note on scale:

Please note that the scale of the drawings and models are at your discretion and should be chosen to be consistent with the level of detail that you are required to communicate.

A note on models: Please note that the didactic intention of this course is to reinforce that models are design tools, especially when developing daylighting strategies. There is no expectation that they are to be highly polished, however they should at all times be accurate.

This project has four primary **Learning Objectives**:

1. To teach you how to analyze the existing condition and determine the optimum location for the building based on these conditions.
2. To teach you how to utilize building elements (shape, orientation, mass, operable elements, etc.) to maximize the benefits of the site.
3. To teach you how to develop a daylighting strategy which is technically sophisticated and poetically expressive.
4. To achieve all of the above in a way that is functional and beautiful. In other words, a compelling work of architecture.

For this project you will be encouraged to conduct four **Areas of Exploration** to achieve these Learning Objectives (not delivering any “paper” version until the final exam):

1. Site plan and sketches (Week of September 26th)
2. Study models, sketches and plans (week of October 3rd)
3. Study models, sketches and sections (week of October 10th)
4. Study models, sketches, plans and sections (week of October 17th)

1_2	2-3	3-4	
03/04_10 progress review	10/11_10 progress review	17/18_10 short presentation	25_10 exam

Please note that students will be required to make an interim presentation to the class on October 17th of 5' length demonstrating your individual progress with the project.