Existing Building Systems

Building Envelope
- The building envelope is designed to be energy-efficient and durable.
- The use of insulation and double-pane windows reduces heat loss and gain.
- The roof is designed to withstand heavy snow loads.
- The building is equipped with a solar panel system to generate electricity.

Plumbing
- The plumbing system is designed to be low-flow and energy-efficient.
- The water heater is equipped with a timer to reduce energy consumption.
- The toilets are dual-flush, which reduces water usage.

Electrical System
- The electrical system is designed to be energy-efficient and durable.
- The building is equipped with a solar panel system to generate electricity.
- The lighting system is designed to be energy-efficient.

Mechanical Systems
- The mechanical system is designed to be energy-efficient and durable.
- The HVAC system is equipped with a timer to reduce energy consumption.
- The building is equipped with a central air conditioning system.

Proposed Solutions

Building Envelope
- Replace windows with more energy-efficient models.
- Install solar panels on the roof to generate electricity.
- Use low-flow fixtures to reduce water usage.
- Replace the roof with a more energy-efficient design.

Plumbing
- Install low-flow toilets and faucets.
- Replace old water lines with new, insulated ones.
- Install a water-saving shower head.

Electrical System
- Replace old electrical appliances with energy-efficient ones.
- Install energy-saving light bulbs throughout the building.
- Use a timer to control lighting and heating systems.

Mechanical Systems
- Install a new HVAC system to improve energy efficiency.
- Use weatherstripping to reduce heat loss and gain.
- Use a water heater with a timer to reduce energy consumption.

Implemented Solutions

Part of the team's budget was spent on energy-efficient solutions to some of the building's most pressing issues. This included upgrading the HVAC system, improving insulation, and replacing old appliances. The team also installed new windows and doors to improve energy efficiency. In addition, the team installed a solar panel system to generate electricity.

In addition to these improvements, a presentation was prepared to educate residents about the benefits of energy efficiency. The presentation focused on how simple actions can reduce energy consumption and encouraged residents to continue making efforts to reduce their carbon footprint.

Instructor:
Nancy Hamilton-Gevemee
Team Members:
Joshua Bradley, Noah Cekan, Daniel Dobish, Jacob Dohn, Jeffrey Hallenbeck, Kent Hoffman, Daniel Jordan, Woon-Kyo Lee, Ireda Sturdivant, Nathan Walsh

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Chapter History at a Glance

- Gamma Beta chapter of Delta Tau Delta was founded in 1901.
- After approximately 60 years of living among the surrounding city, fraternities began to move onto IT's main campus.
- The first bid for the shelter was in 1959.

Construction was completed in 1961.

- Purely Modernist in nature, the building has four structural load-bearing brick walls which are clearly expressed on the exterior; the brick color matches fellow fraternity and sorority houses and the academic building on Mies's Main Campus.

- As the shelter approaches 50 years of age, problems are surfacing; energy performance and the expectations of today's college students, particularly, must be addressed.

Existing Architectural Plan

Current Space Use

Public and Private Spaces

Circulation Patterns
Proposed Redistrtution

Proposed Architectural Solutions

Basement Excavation Proposal

Third Floor Proposal