

A Portfolio of



Selected
Works by
Changsong Li

Making Architecture

Climate, Maps and Models

Course Project, 2024

Instructor: Marco Ferrari, Elise Hunchuck

Collaborator: Sewon Min

Research Topic

What is summer in the Arctic? The project started with this question. We think of summer as the hottest season of the year, when human energy consumption peaks, birds migrate to the Arctic, and people travel the most for vacations when ice melts. But the meaning of the season varies with latitude. This typical four-season definition comes from temperate mid-latitude cities. In the Arctic, seasons are distinctly different: the long, dark, and frozen winter lasts nine months, followed by a brief, intense summer of melting ice, continuous daylight, and a sudden burst of life for three months. Seasons need to be redefined—not just by time and temperature but also by region.

Bird migration is closely tied to this redefined concept of seasons. Birds actively reside in this regional summer. The cells in their eyes detect the Earth's magnetic field, guiding them northward. Each bird can recognize the movements of up to seven other birds around themselves, forming flocks that travel north during the summer. Migratory birds from around the world are born in the Arctic during the summer and return every year.

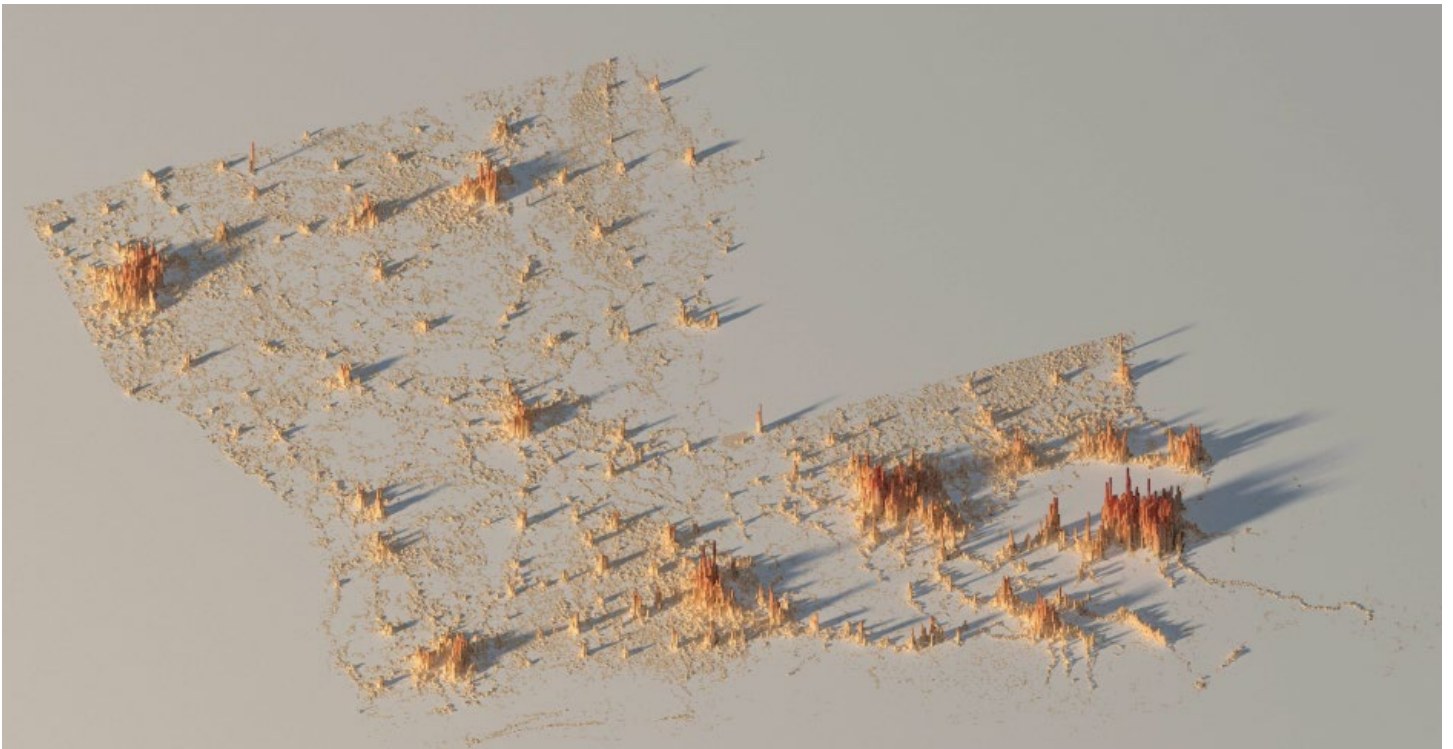
The oil industry and melting sea ice due to climate change are also drawing people to the Arctic. Oil infrastructure built on permafrost accelerates permafrost thawing, which destabilizes the infrastructure. Melting Arctic Ocean ice increases shipping, which in turn accelerates ice melting. These vicious cycles will continue for some time. Thawing permafrost leads to an increase in polygon-shaped floodwaters and collapsing land, resulting in more unstable ground and higher incidents of oil leaks. The retreating coastline, taking on a polygonal shape due to melting permafrost, sees increased shipping, with port cities flourishing as hubs for human movement. Amid these changes, birds continue to arrive for breeding, re-locating their nests to new places—over retreating coastlines, onto unsubmerged land, and even onto oil pipelines.

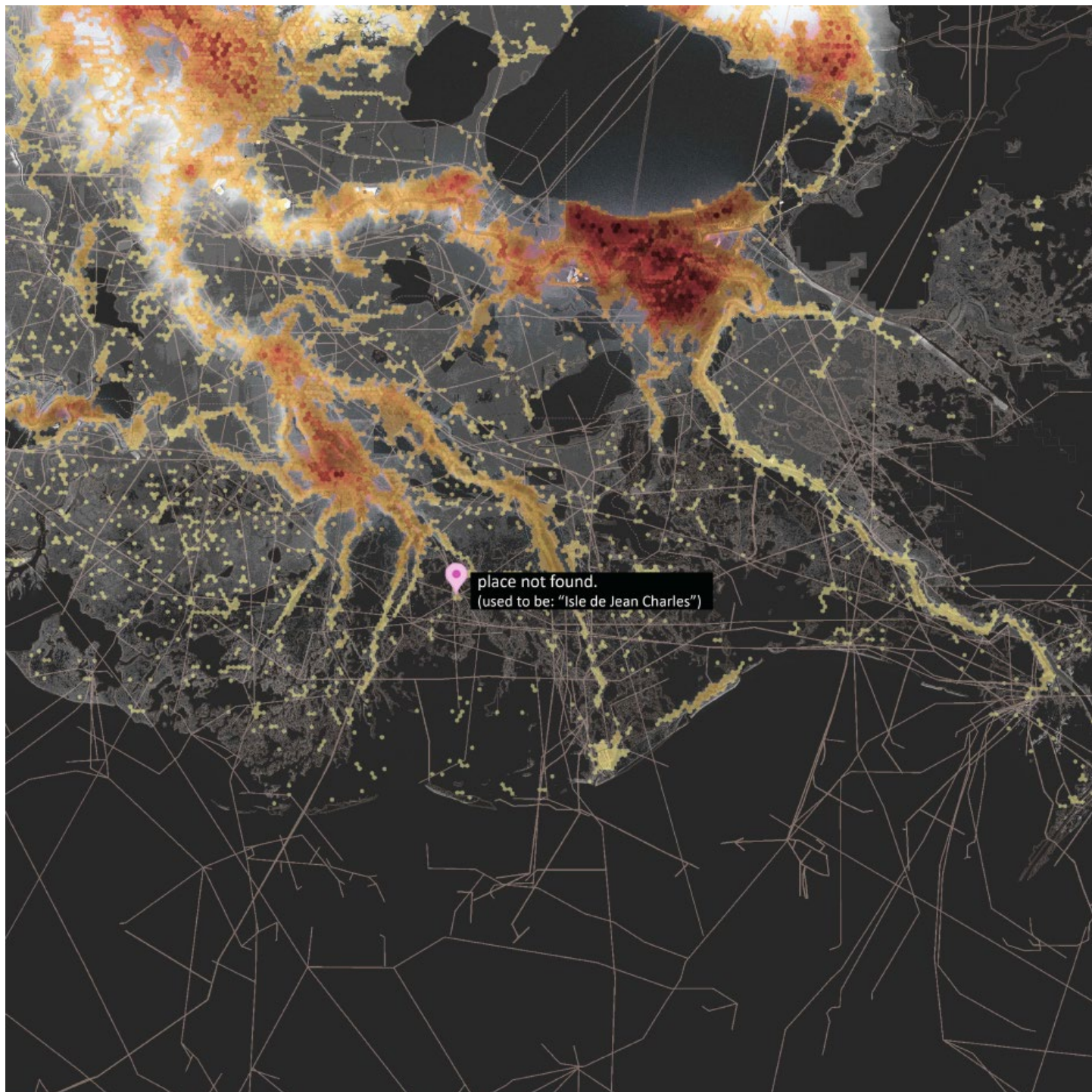


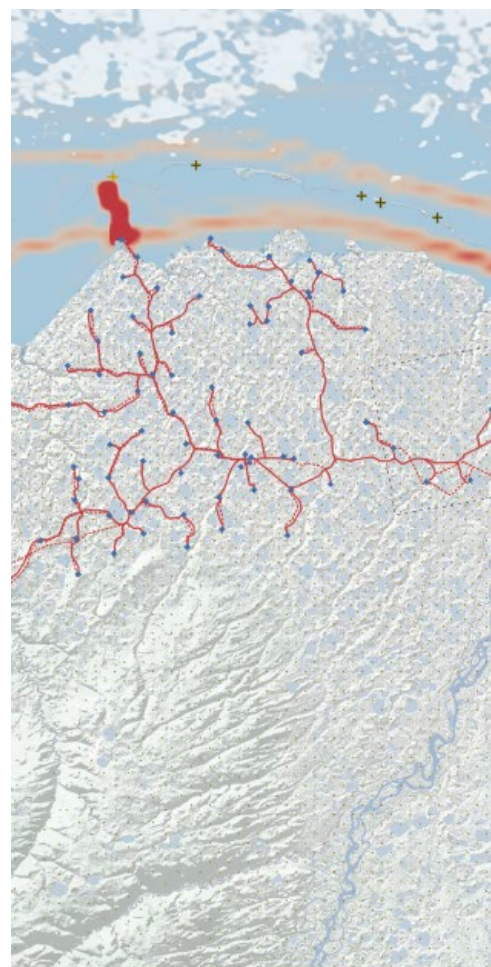
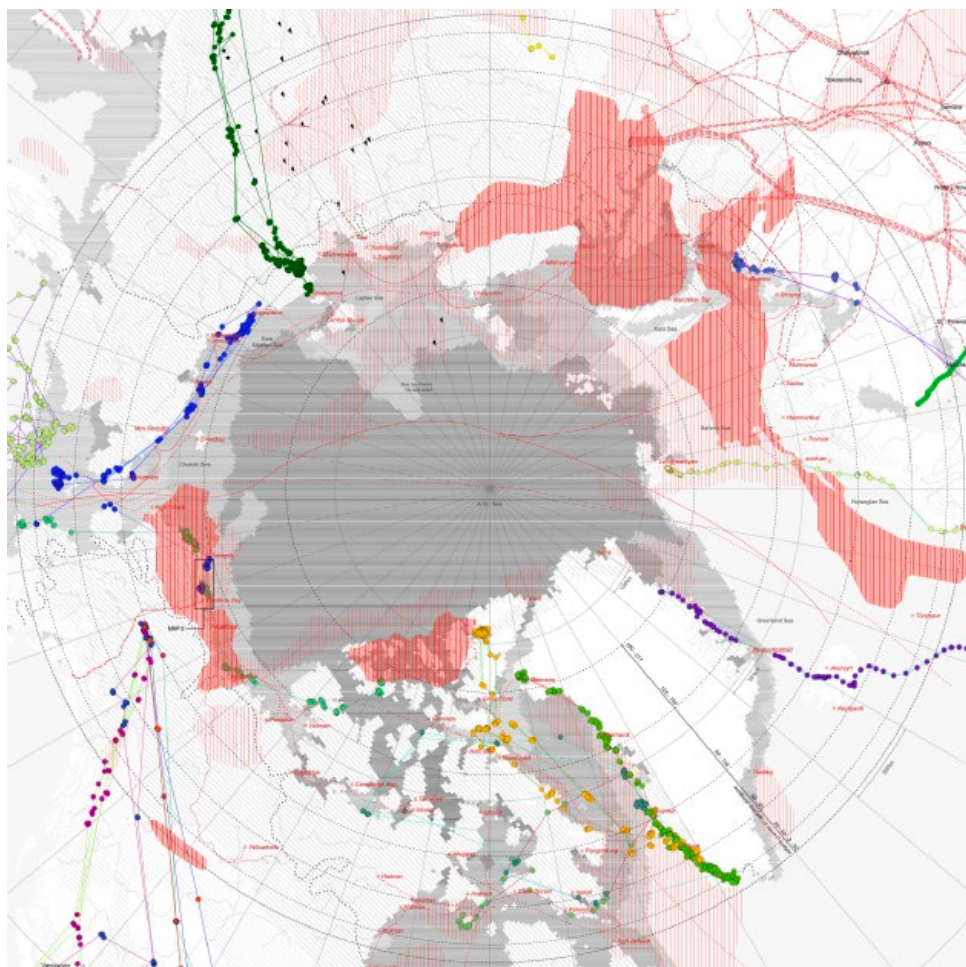


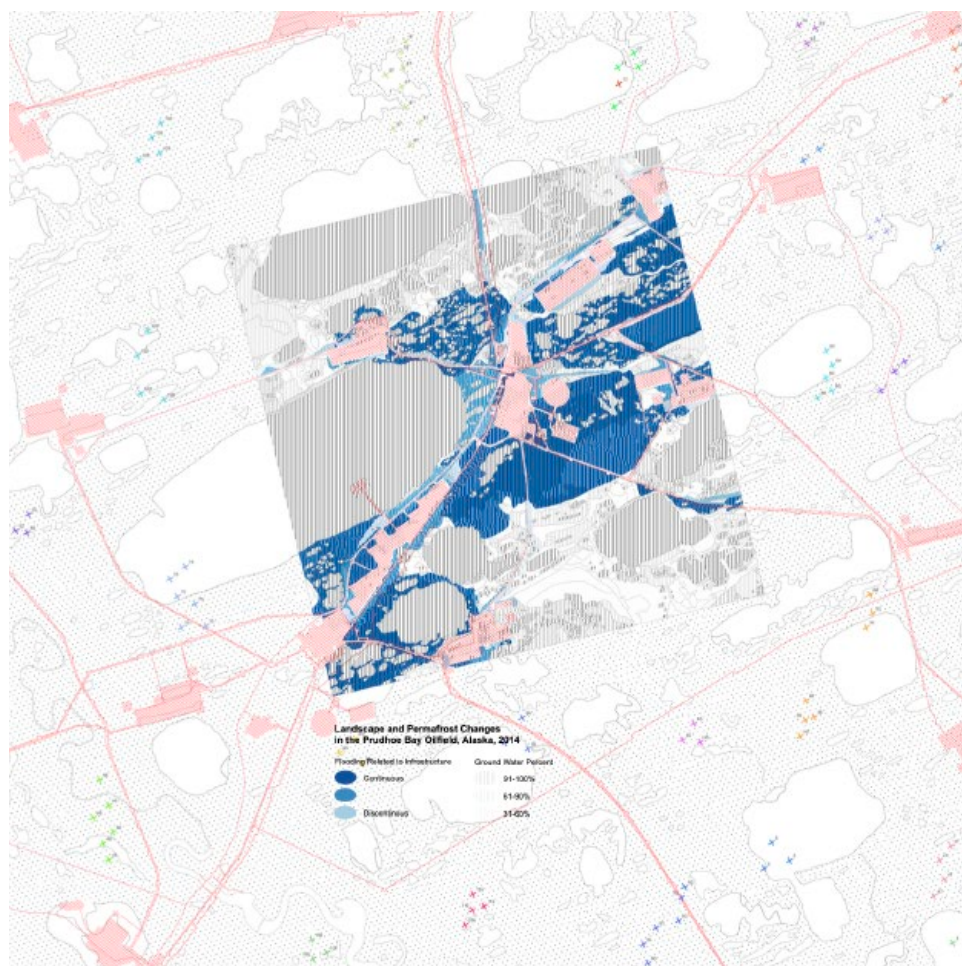
Population Density Visualization

In an era of exponential data growth, data visualization emerges as a powerful tool, providing insight into complex problems. A visualization depicting population density in Louisiana has been created to enhance our understanding of the impact of eroded coastlines on the population residing near the coast. This visualization also illustrates the intimate connection between human habitats and Earth's geography.









New Typology For Housing

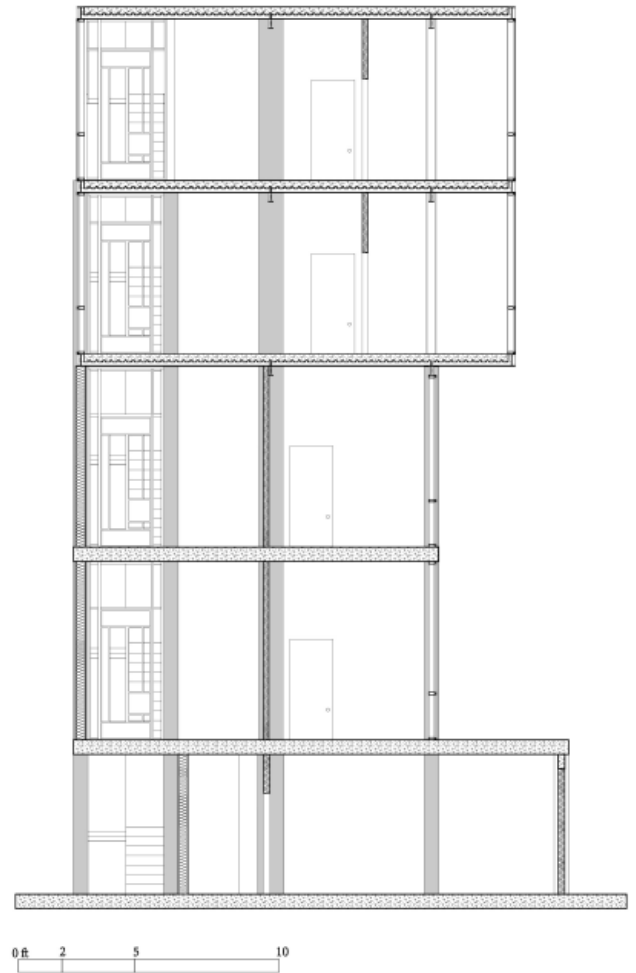
Course Project, 2025

Instructor: Michael Bell

Hybridity

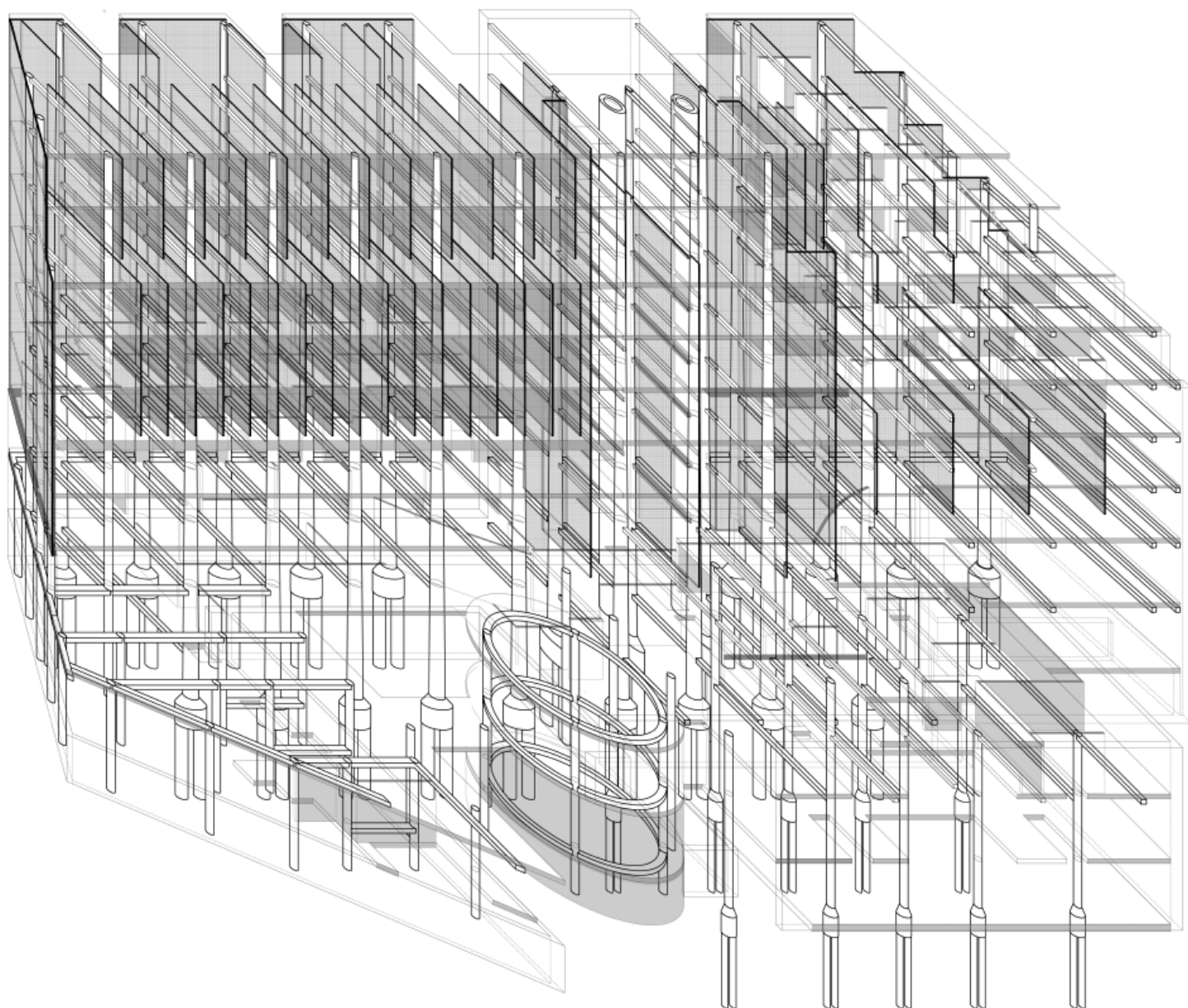
Each structural era responded to the demands of its time but also revealed limitations. **Masonry** lacked flexibility. **Steel** demanded precision and came at a cost. **Concrete** offered versatility but required significant resources.

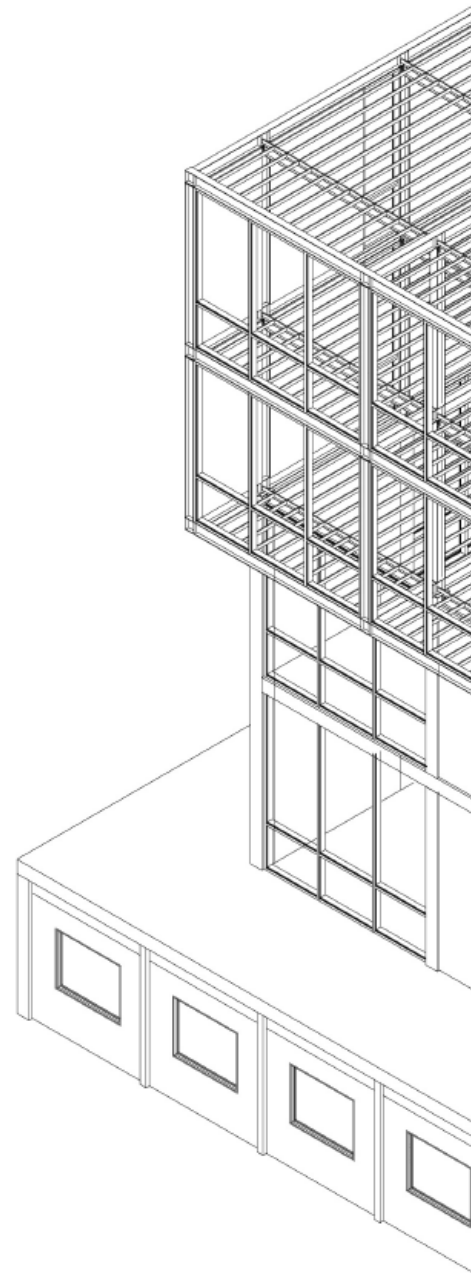
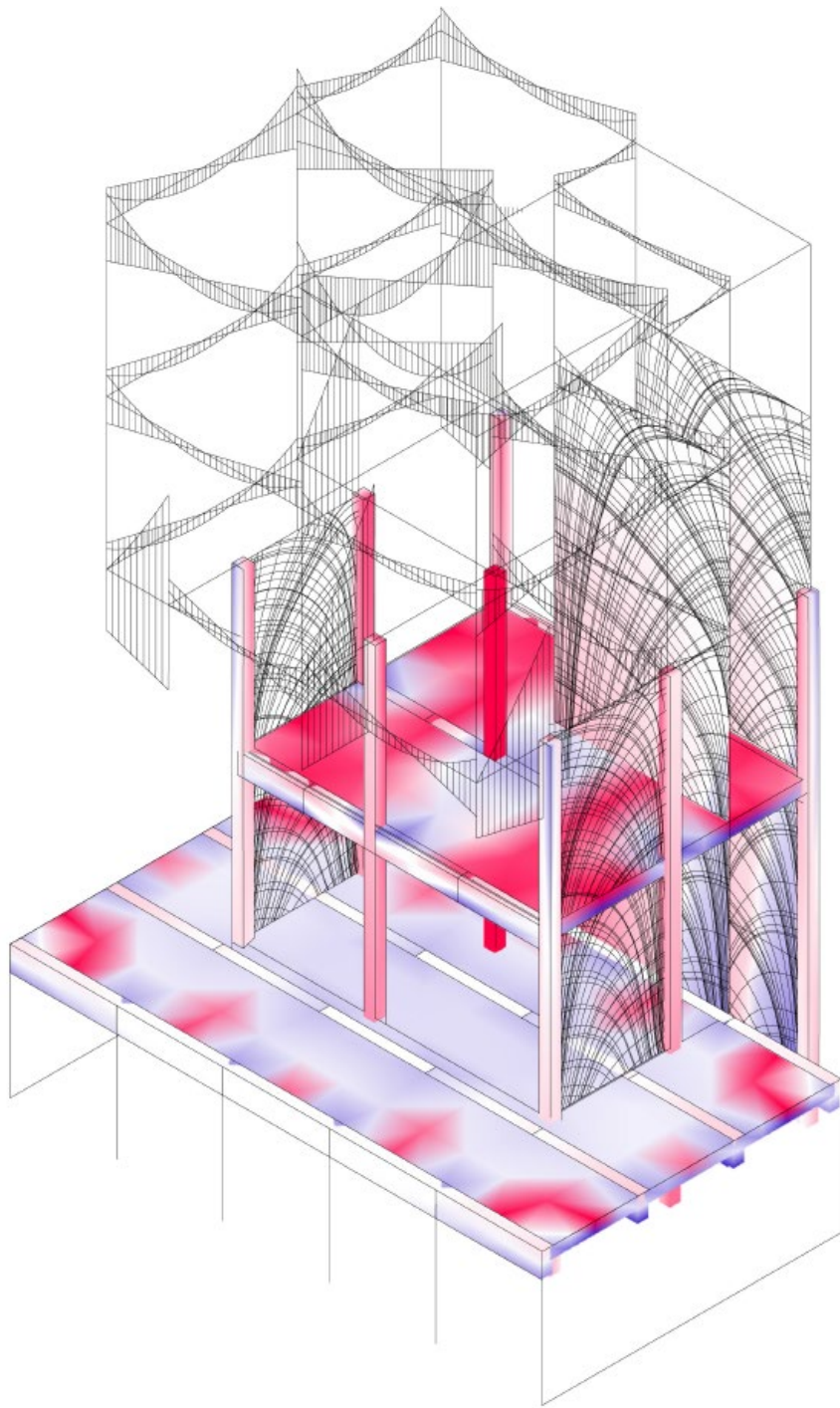
This leads to my proposal: hybrid structure that meets diverse housing needs. It leverages different systems—**shear walls, cores, and mixed materials**—tailored to specific architectural and social demands. For example, in a 5-level prototype, lower levels could utilize shear walls for stability, while upper levels employ flexible cores and redistributed loads to create adaptable spaces. This allows for a mix of unit types: **compact studios, family apartments, and shared housing**.

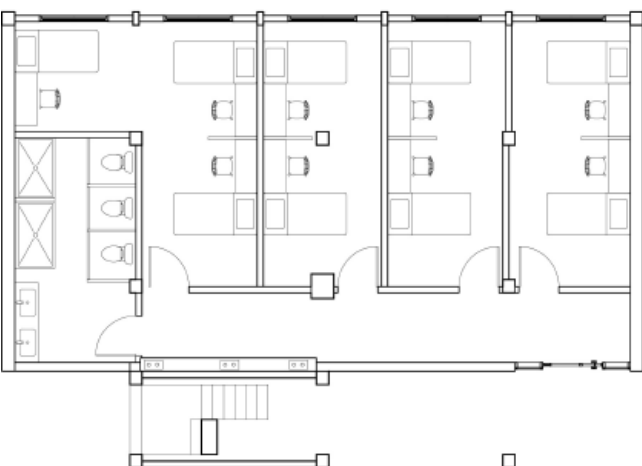
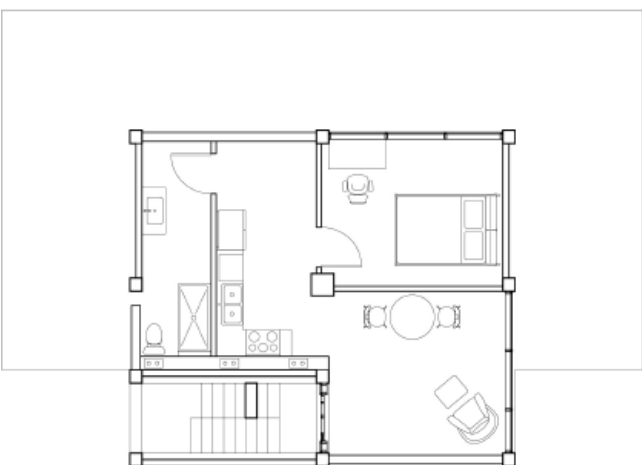
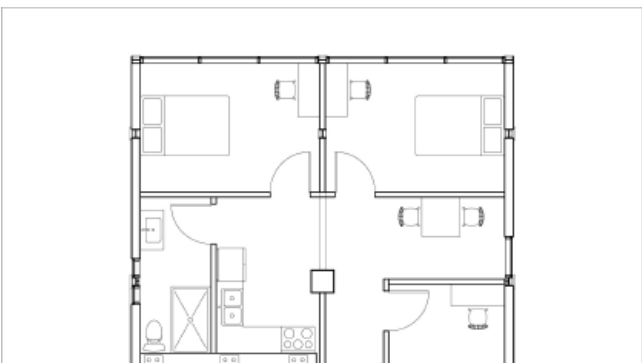
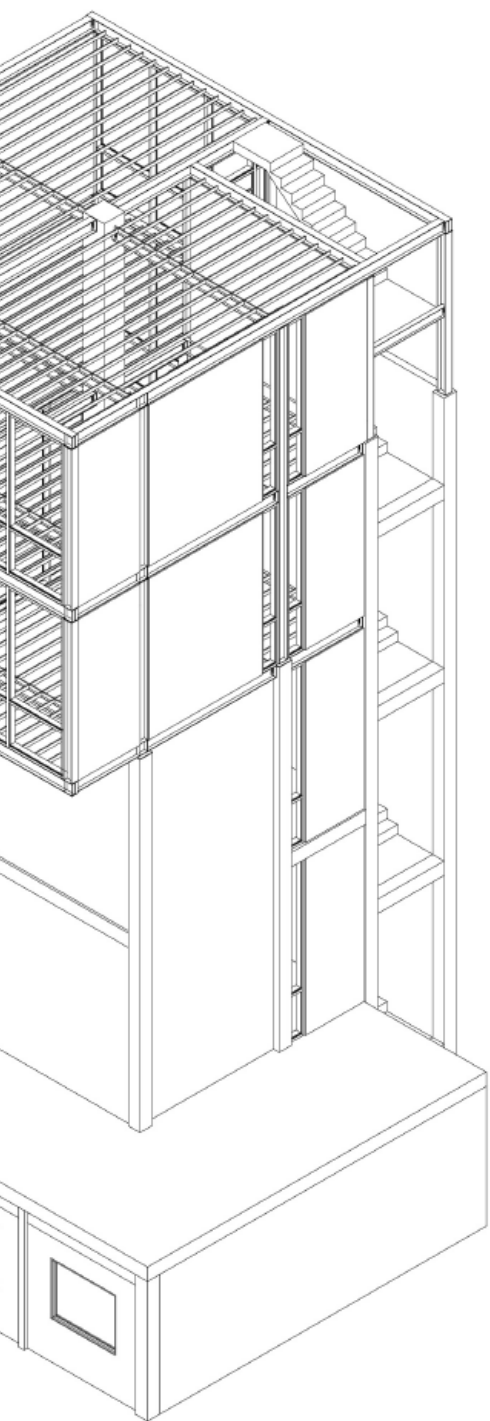












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Redesign Autism

Course Project, 2025

Instructor: Alonso L Ortega, Anthony Clarke

Intent

The design focuses on creating a supportive and structured environment for autistic middle school students by reimagining their journey from home to school. The project considers the entire transition process, beginning with the school bus route and stop, ensuring a predictable and low-stress experience. The bus interior is designed to minimize sensory overload through noise reduction, adjustable lighting, and individualized seating arrangements.

A key feature is the transition center located at the school's perimeter. This space functions as both a preparatory and retreat area, allowing students to regulate themselves before entering the school environment. Sensory-friendly elements, such as calming zones, customizable lighting, and tactile materials, help manage hypersensitivity related to sound, visuals, touch, and social interactions.

By integrating these elements, the design aims to foster inclusivity and adaptability, ensuring autistic students receive the necessary support to navigate their school day with confidence and comfort.





