The Neighborhood Project - SUSTAINABLE MONTPELIER 2030 - DESIGN COMPETITION

Executive Summary

Vision:

We believe that a careful relocation and management of automobile traffic patterns and parking in Montpelier can enhance the vibrancy and improve livability of this unique city. Our concept breaks down the larger, more complex sustainable vision into smaller, easily managed neighborhoods that can be developed incrementally over time.

Thoughtful design can improve quality of life. Our Design engages the community, supports local businesses, encourages growth in local agriculture & the Arts, and provides opportunities for personal growth, public interaction, and active contemplation. An engaged, active citizenry is essential for a viable democracy and a successful Net zero future. The following is a summary of the major areas of focus in our design:

Accessibility, Connections and Natural Features:

- We engage the river through the development of public walkways and terraced access areas that allow direct contact with the river for wading and/or boat access. Walkways are designed to allow multiple connections and access points throughout.
- We replace paved areas in the central downtown area with green spaces including parks, parklets, sculpture gardens, wildflower and bee gardens. Walkways are designed to be universally accessible to the fullest extent.
- We will revitalize the river banks and edges to create vegetative buffers that contain flooding and reduce excess storm water overflow events.

Built Environment:

- The overall design provides close to 1000 new units of housing. The apartment sizes vary from studios to two-bedroom units. Housing will be provided for all income levels. Buildings are universally designed to accommodate all ages and abilities.
- The building scale and design features complement and enhance the adjacent neighborhoods in which they are located.
- Building materials are selected to reduce the building's embodied energy and provide durable long-lived structures. Where possible materials are sourced locally or regionally.
- Flood prone buildings are designed to be resilient or flood-proofed. Resilient structures have a structural frame and building systems that can experience a flood and be easily put back in service with minimal repair work. Finishes are easily removed and replaced. Where possible, buildings can be raised above the floodplain and appropriate access designed into the master plan.

Achieve Net Zero Energy:

- All new building designs will meet or exceed Net Zero requirements.We have the technology and knowledge to build these structures easily and cost effectively. These buildings have a robust thermal envelope, reduced mechanical systems, and supplemental electricity from roof-mounted PV systems.
- Existing buildings are the biggest challenge to achieving Net Zero. Through energy modeling and a strategic use of energy-efficient measures, existing buildings can become Net Zero in operation.
- All buildings, where possible, are tied into the existing district energy system. A careful use of biomass can be a sustainable, environmentally-balanced approach to supplying heat, hot water, and electricity.
- In this project, we propose installation of PV panels on all new roofs, as well as ground mounted PV panel locations that provide shading opportunities. We anticipate production of enough electricity to power 787 households annually, saving $718,044/year.
- Additional alternative energy uses include the development of a gravity-fed hydroelectric system, and the installation of wind turbines.

Integrated Transportation System:

- A major goal for this project is to reduce surface parking in the downtown area by creating a green belt. This zone will eliminate surface and street parking, while giving priority to pedestrians, bikes, and buses. In addition, a multimodal transportation center will be built. The center includes bus, light rail (electric), and a car share program that links residents to towns and villages throughout the state. Local transport utilizes buses, bicycles, and Segways.
- Satellite parking garages provide long and short term parking for cars and bicycles. At these locations there are public transportation services, including car, bike, and Segway rental facilities.
- State Street and Elm Street are redesigned to replace on street parking with green space, a bike lane, and a dedicated bus route.
- Langdon Street and the section of State Street between Main and Elm Street are redesigned as pedestrian ways to enhance artistic activities and public engagement.

Conclusion:

Our design is, above all, feasible. This phased approach allows Montpelier to easily transition to a beautiful, engaging Net Zero City. Replacing the extensive automobile infrastructure in the downtown area with a central public transit system, and infilling the surface lots created by its redesign, allows a tremendous opportunity to develop a uniquely enjoyable and livable city that enhances everyone’s quality of life.