

Building an Ecological Capital

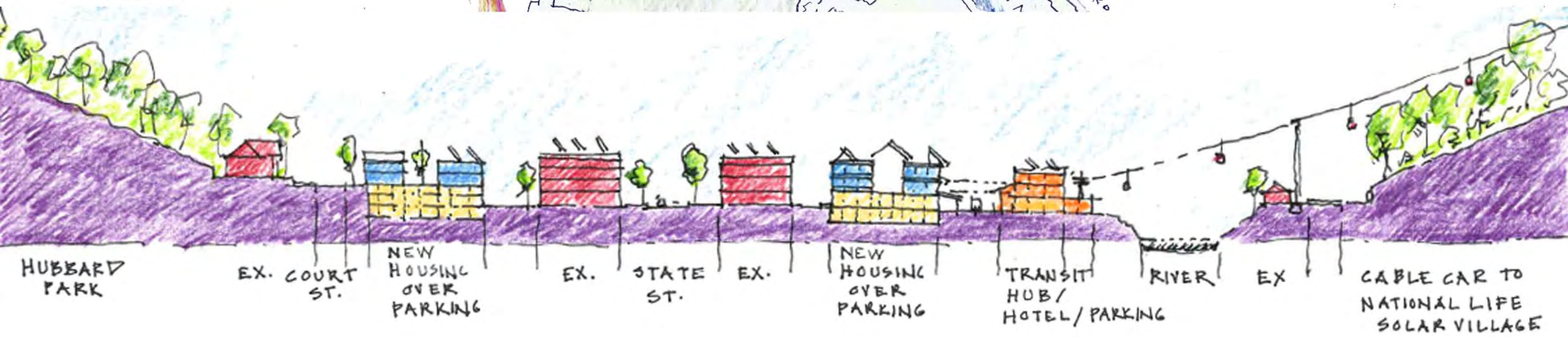
Montpelier Achieves Net Zero by Modeling a Healthy Ecosystem

Energized by the Sun: Sunny outdoor spaces and gardens on the south side of buildings utilize passive solar and photovoltaic panels to capture solar energy. Main Street displays a solar canopy designed to power the downtown while shading pedestrians. Montpelier moves away from the fossil fuels of the 20th century, massing all new development on an east-west axis to maximize the amount of solar energy generated on buildings and over parking lots and garages. The District Heat project, fueled with local, sustainably harvested wood, now reaches all of the Designated Downtown. The energy from water flowing downhill from Berlin Pond is harnessed with micro hydro turbines.

Diverse: The land use pattern of the 20th century created silos of single use development, putting home, work, play and school in separate zones. A broad array of residential, civic and commercial uses in the downtown now provides for rich, vibrant and diverse community life. The vast parking areas of the 20th century settlement pattern are reconfigured and relocated to make way for expanded housing options with a density of 30-50 units per acre. Low to mid rise apartments, townhouses, cohousing, and congregate housing in the downtown create a total of 400-500 units plus shared spaces and facilities. Existing neighborhoods infill with apartment conversions, small accessory dwelling units and studios. With 300-500 units of housing near the site of National Life, a total of up to 1,000 new households add economic vitality to Montpelier's downtown. New preschools, fitness centers, community gardens, co-working office space, a year-round farmer's market, riverfront access, maker spaces, and conference facilities will enliven the downtown for both residents and visitors.

Interconnected: Montpelier preserves, supports, and improves pedestrian and bicycle access to the downtown and beyond through a network of paths and interconnected green spaces. With concentrated density, everyday needs are met within walking distance, and with 24/7 access to expanded public transit, mobility is assured for all. With light rail service to nearby towns, enhanced Amtrak service to regional destinations, a tram for commuters to travel to National Life, and an extensive network of electric vehicle charging stations, Montpelier is a multi-modal transportation hub. Infrastructure improvements—including walkways, bridges, plazas, bike paths and bike storage—prioritize pedestrians and cyclists, making it easy for residents and visitors to move around the city without a vehicle. And still it is easy enough for government employees, legislators, tourists, citizens, businesses, and shoppers to get around in a car—by providing strategically located multi-level parking garages with solar roofs and green spaces that can easily be re-purposed in the future as combustion engines are phased out. New development is built over parking wherever possible, with parking below street level.

Adaptive: Montpelier models a healthy ecosystem by demonstrating how species adapt to a changing world. The creative re-use and regeneration of the existing historic building stock of the city expands job opportunities for Vermonters through weatherization, super insulation and renewable energy initiatives. By providing for residential and commercial growth within the downtown core, and by connecting these multiple uses through multi-modal transportation options, Montpelier creates an even more vibrant, resilient and beautiful capital city that enriches the lives of residents and visitors alike.

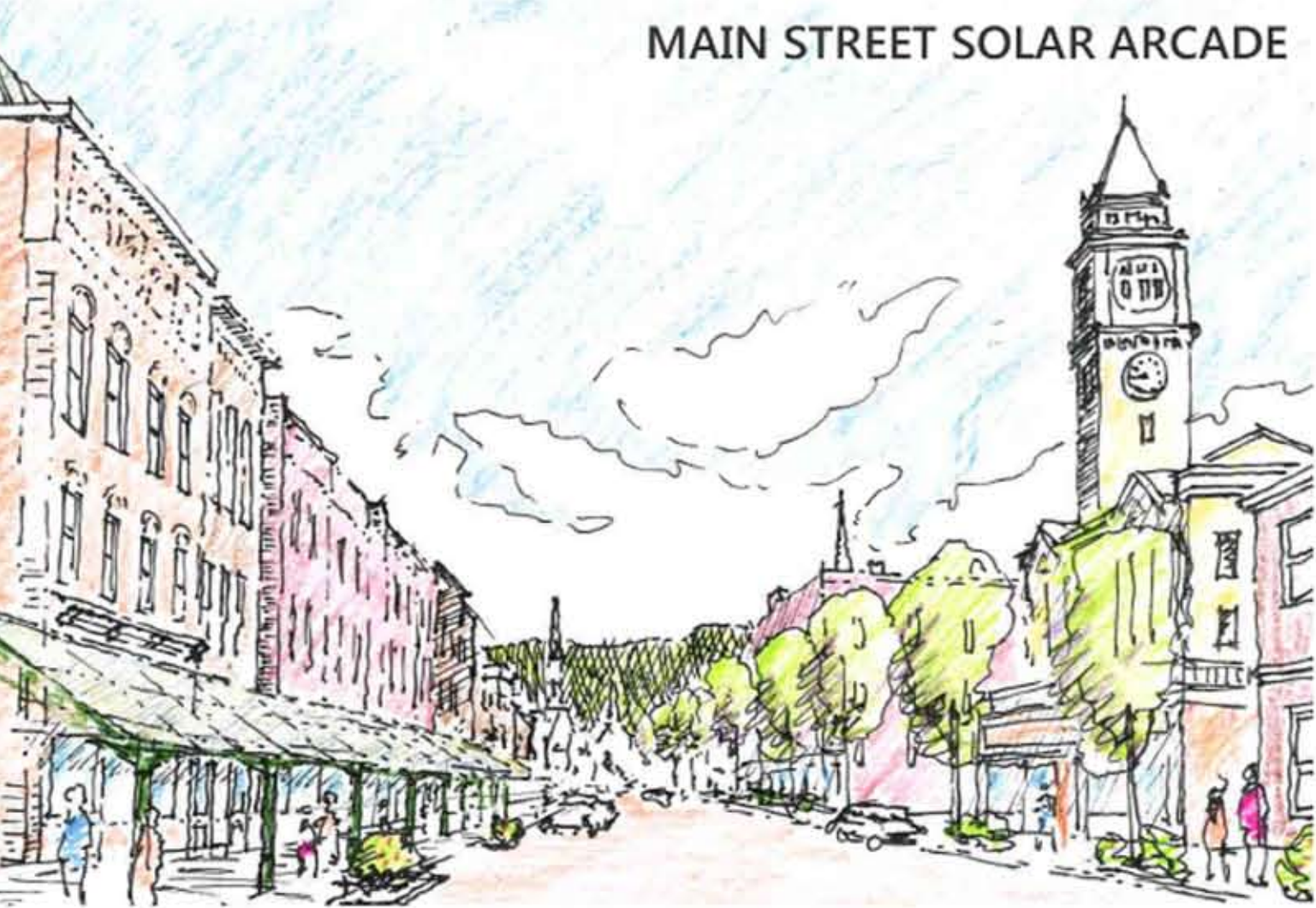


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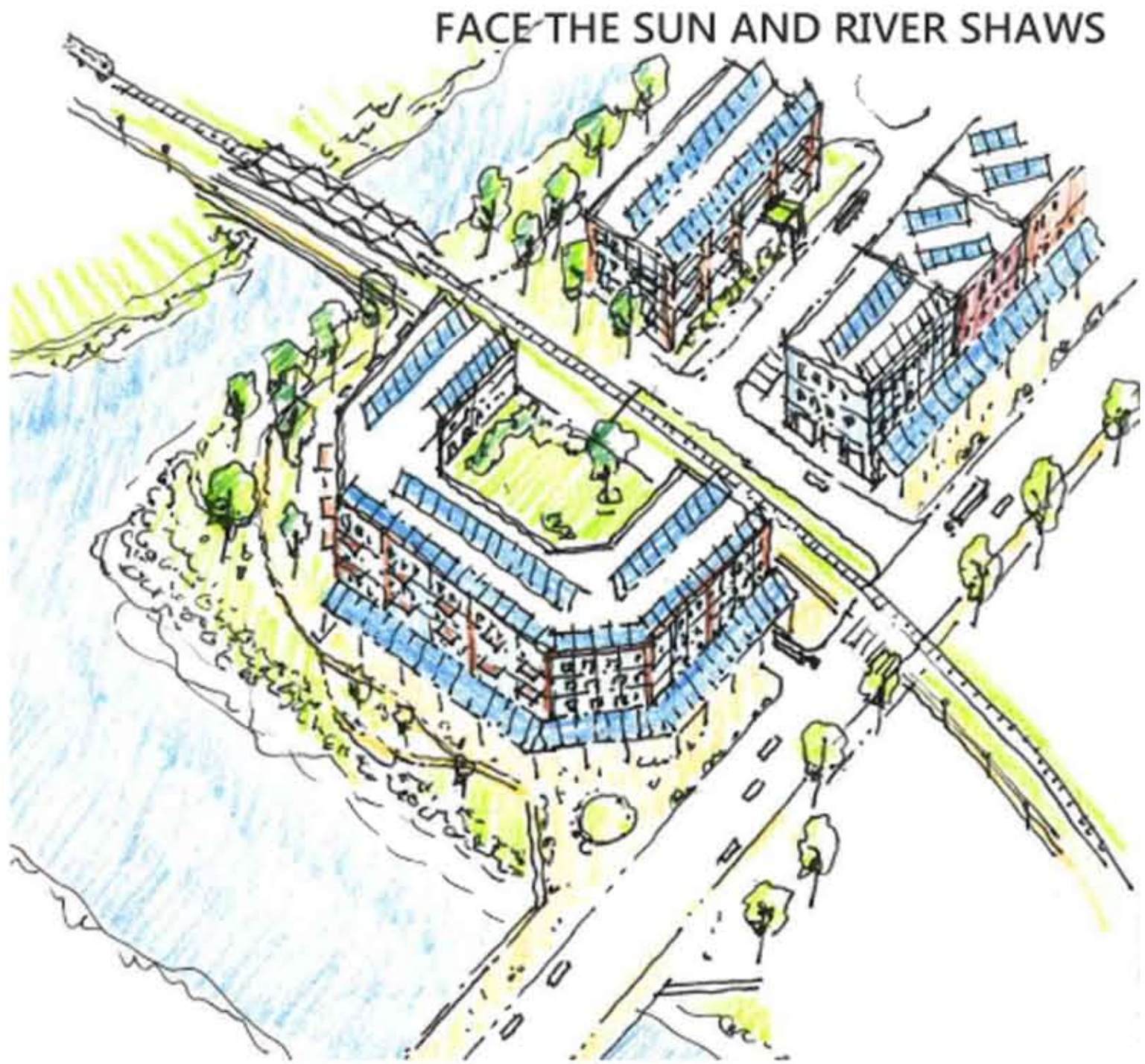
COURT STREET HOUSING



TRANSIT HUB



MAIN STREET SOLAR ARCADE



FACE THE SUN AND RIVER SHAWS



10 BUILDING PATTERNS FOR AN ECOLOGICAL CAPITAL

1. Mass new buildings longer east west, to maximize daylight, solar access, and PV potential.
2. Mass buildings higher to the south and lower to the north to preserve solar access to neighbors.
3. Design for generally 40-60' depth to allow daylighting of most spaces, residential and office especially.
4. Build 3-5 stories max. Maintain a human scale townscape, and this is good for fire safety.
5. Provide parking below all buildings, below and at grade, 1 or 2 levels.
6. Insulate and renovate all new buildings to "net zero ready" standards.
7. Employ solar PV awnings at ground level on many facades.
8. Maximize potential rooftop solar PV, on new and existing buildings.
9. Minimize the exposed exterior area of buildings, build as many joined uses as possible, while preserving town scale, and maximizing privacy, access to light, and connections to the outdoors.
10. Preserve historic facades, but encase existing non historic exterior walls with glass walls or insulation.

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