



“What is the use of a house if you have not got a tolerable planet to put it on?”

-Thoreau, 1860<sup>(1)</sup>

I.  
*The mission is simple: create modern housing that belongs to its climate and region, sustains itself and its owners while supporting community and environment alike<sup>(2)</sup>.*

a)

## **M:OME Modern Sustainable Living A Paradigm Shift Toward Intuitive Mapping**

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The adverse effects of status quo housing development and (sub)urban planning strategies in California result in over-parked endless sprawl, heat island effect, long commutes, and wide right-of-ways crafted for the vehicle, while ignoring the human scale and experience. The dubious qualities of the suburban tract are well documented; yet, despite the fact that these negative impacts are so obvious and plentiful, we continue to build and plan in this fashion as our primary means for providing new housing. This paper will endeavor to set in motion a paradigm shift in (sub)urban planning that reverses the negative impacts, **while creating a more intuitive land mapping process that listens to the land for inspiration.**

The model is the M:OME Bridge Street Neighborhood (BSN), a \$14 million dollar mixed-use development in the City of San Luis Obispo, bringing environmentally friendly housing and work/live lofts, as well as diverse living options that appeal to a wide range of personalities and income levels. All of these housing options will create an inherent diversity ensuring a rich, varied community.

The Bridge Street Neighborhood embraces the ideals of higher density, in-fill development bringing offices, manufacturing, and housing into closer proximity with each other. Housing people closer to work, retail and services means more of them are walking and biking around town, reducing green house gases that are purported to cause "global warming". In-fill development lends a sense of community because the residents are naturally forced to interact with each other. Perhaps one of the most important benefits is the mitigation of peripheral sprawl and the preservation of open space and Ag lands from conversion into suburban growth, mitigating also the force that requires residents to drive further to access work and services.

**Many projects embrace these ideals; however, the key move in this projects' development is to suspend concern for the creation of property lines, usually the first planning move in a subdivision's life.**

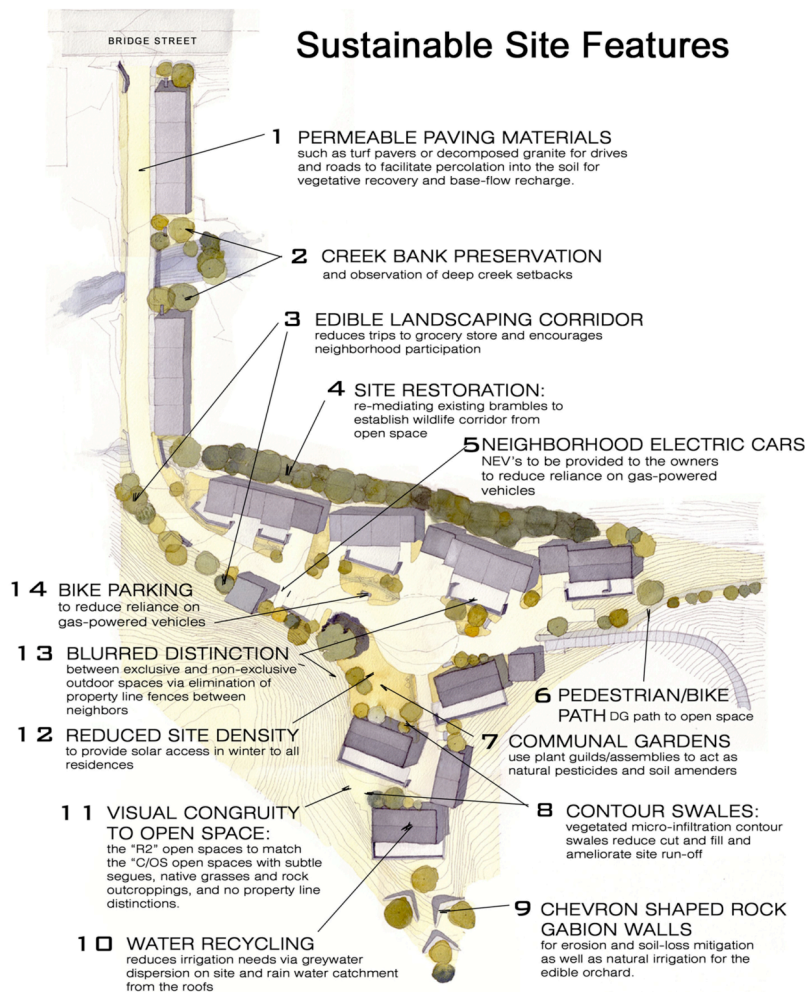


b) view of the two and three bedroom attached TOWNM:OME. M4 and pedestrian path to open space beyond.

The standard modus operandi in a planned urban development or suburban tract community is to first layout roads, utilities and the various lots. Usually, the lots are split into simple rectangles, with trapezoids happening around the cul-de-sac. There is little or no regard for the lay of the land, view corridors, wind roses, optimal solar orientation, hills, creeks, existing mature trees, and site forces or unique features.

In the Bridge Street Development, the design process begins with an evaluation of the entire 7+ acres to understand the site forces that fashion the most beneficial urban plan, as well as the most environmentally sensitive endeavor. Areas are evaluated to determine optimal locations for open space, commercial work/live space, dense urban residential space, medium density and the lowest density residential spaces, as well as community garden spaces. At the same time, the residences are designed to take advantage of views and primary solar exposure for direct gain in the cold months. Solar shadows are determined such that no residence misses the opportunity for heat gain until three in the afternoon on the 21<sup>st</sup> of December. Visual congruity between the architecture (with its exclusive-use outdoor spaces) and the community gardens and the

community open space is optimized. Topography and site features such as mature trees, rock outcroppings, creeks, steep slopes, and the narrow width of the panhandle are all considered.



A desire for social sustainability also filters into the design, driving the decision to provide a variety of housing and commercial spaces.

The housing diversity creates units ranging from 450 square foot studios with garages and workshops beneath up to 2,700 square foot four bedroom detached houses with guesthouse over detached garage, twenty-seven units in all. The guest unit is designed to be used by extended family members, nannies, nurses, guests, or as an office or rental to help defray the mortgage expenses. The commercial spaces were designed along the 60-foot wide panhandle, which also acts as the entry onto the site. Inspired by Dutch canal housing, the Gatehouse lofts are designed to benefit artists, artisans, craftsmen, and manufacturers, professionals, or any individual requiring a work/live environment.

c) Intuitive Mapping Urban Design Strategy

**Only after the project has been completely planned and designed architecturally and with special attention paid to all of the aforementioned considerations, such that the design is seemingly inalterable, only then do we begin to subdivide the property.**

**This Intuitive Mapping allows the site to broadcast where and how development should occur.** It allows the most sustainable and effectual urban plan to emerge with the arbitrary and invisible property lines taking a back seat as a design consideration. It is a most intuitive approach to urban planning, and yet remains the least common mode of operation for developers and planners because it requires the land plotter to actually think about the multiple layers of a property development ahead of the map creation.

California land speculators and developers have come by their counter-intuitive land plotting process honestly. Marwan Ghandour<sup>(3)</sup>, in his paper "Representation and Spatial Incorporation of Iowa, 19<sup>th</sup>-20<sup>th</sup> c.", writes extensively about the strategies incorporated by the U.S. surveyor general from 1785 until the present. These strategies originated from the township system of





experience flooding from time-to-time. The system was designed in complete contrast to the way Nature handles water by slowing it down, absorbing it into the soil, irrigating as it moves on to the larger creeks and tributaries.

In every one of these instances, the Bridge Street Neighborhood contrasts by listening to the site forces, adapting the plan and architecture to cohere to the site, and to benefit from all it has to offer.

*"It's developers who are willing to push new concepts like Bridge Street that ultimately move those ideas into the mainstream."*

*Jennifer Seal, Rocky Mountain Institute<sup>(4)</sup>*

## **II. Site Design Philosophy**

*"Permaculture is the art and science that applies patterns found in nature to the design and construction of human and natural environments. Only by applying such patterns and principles to the built environment can we truly achieve a sustainable living system. Permaculture principles are now being adapted to all systems and disciplines that human settlement requires. Architects, planners, farmers, economists, social scientists, as well as students, homeowners and backyard gardeners can utilize principles of Permaculture Design."*

*Larry Santoyo<sup>(5)</sup>*

The goal is to create a neighborhood based on the principles of permanent culture or 'permaculture', adopting an attitude of sensitivity to the site. The goal of the architecture is to place it lightly on the land by respecting the existing vegetation and habitats. The M:OME definition of a successful design is a self-managed system, regarding both site and architecture. The Bridge Street community of housing and commerce would be harmoniously integrated into the natural setting in a way that supports a healthy micro-community. The neighborhood is a size in which people are able to know and be known by others and where each member feels they are able to influence the community's direction. For example, food can be grown in common in the edible orchards, and the neighborhood decides how the community garden is appropriated to most benefit the residents (as garden, natural open space, play areas or similar).

The houses will rest on landscaping resembling the original site and the surrounding hills. The housing placement forms a common area for a community orchard, gardens, mailboxes, and bike benches that allows residents to interact. In addition, turf pavers and decomposed granite will be used on the vehicular surfaces to allow greater percolation into the water table, and greater sensitivity to the original feel of the site. A nice side-effect of the permeable paving, in lieu of AC paving, is a reduction in the heat build up that black-top streets and parking lots create. In addition, the permeable paving is coupled with a narrower road width to create our own "woonerf" concept. The Dutch developed the idea of "woonerfs"<sup>(6)</sup> (loosely translated as "living yard") to take back their streets for pedestrians, children, and cyclists by decreasing the vehicular right-of-way, and modifying it to something more permeable and tactile. The vehicles naturally slow down, without a sign telling them to do so. We also adopt permeable parking areas in case the spots do not get used for cars; furthermore, we limit the number of parking to the minimum required by the City, because, as Andy Wiley-Schwartz<sup>(7)</sup> was quoted in DWELL magazine this month, "People just don't get that if you build faster roads and you build more parking, there will be faster roads and more parking".

One of the most important issues for the site design of this parcel is the natural flow of water from the surrounding hills through the site. Our proposal is to plant an orchard in the southern catchment ravine to control erosion and capture some of the rainfall for irrigation as it comes down the hill. This addresses the permaculture principle of water catchment and soil fertility as high (in elevation) on the landscape as possible.

Because of the serpentine rock at a shallow level on the site, the water sheet flows through the site rather than percolating down. Vegetated contour swales address this problem by acting to harvest seasonal sheet flow of rainfall, which slowly infiltrates and recharges groundwater down slope, thus retaining moisture in the landscape much longer. This is called '*pattern application*' in permaculture. More than an aesthetic caprice, these contours now direct water flow and nutrient dispersal with maximum efficiency via gravity.

Permaculture principles of '*edge effect*' are used in retaining the existing vegetation of brambles in the wildlife corridor (a dense blackberry thicket forming a wildlife corridor, and a physical and visual boundary to the northern edge of the site). An edge is an interface between two mediums; in our case this would be the edge between the housing and the neighboring property to the north.

Plant Guilds are made up of a close association of species clustered around a central plant. This assembly acts in relation to the central plant to assist its health, aid in management, or buffer adverse environmental effects. An example would be apple trees with edible mint and nasturtium planted below to naturally prevent apple maggots, adopted in our edible orchards.

### III. Building Design Philosophy

*"I sometimes dream of...a house whose inside is an open and manifest as a bird's nest...where to be a guest is to be presented with the freedom of the house, and not carefully excluded from seven-eighths of it, shut up in a particular cell..."*

Henry David Thoreau<sup>(8)</sup>

The Bridge Street Neighborhood responds to the need for a house that is warm, friendly, and economical to operate; an efficient machine with integrated environmentally-friendly technologies. A new Victorian, Craftsman or Mission style home with photovoltaic panels, water catchment systems, solar water heaters, and sunshade devices, appears incongruent and anachronistic.

The inverted gable roof provides the water catchment system, an optimal photovoltaic roof angle, and a unique aesthetic while obscuring from vision the roof equipment. It maximizes natural daylight to minimize reliance on power. In addition, the roof-form extending up and out opens to views of surrounding ridgelines so prevalent on this site. It accentuates the notion of the indoor/outdoor relationship desirable in our climate, and it phenomenologically invites one to enter into the core of its interior, not to mention inviting the welcome winter sun. The project will be built using "Healthy House" materials that incorporate non-toxic materials with little or no out-gassing and that are not destructive to the environment in their manufacturing process.

### IV.

In conclusion, M:OME/BSN intends to demonstrate that it is possible to build a community of houses and workspaces that set a higher standard than the convention. We can live in technologically progressive houses, which take advantage of scientific advances ready and available on the market.

The M:OME/BSN team would like to set a precedent and inspire the establishment of other communities such as this throughout our region and beyond. A group of people can come together, buy a piece land, hire an architect to guide them through the design, permits, codes and variances, and create their own version of a micro neighborhood using "intuitive mapping" urban strategies, thus obviating the need for a developer and the additional cost to each of their residences. The Bridge Street Neighborhood will provide a model for this type of community.

### **Acknowledgement:**

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### **Endnotes:**

- 1) Farely, E.M. Three Houses: Glenn Murcutt. Architecture in Detail Phaidon Press Limited, London, New York, 2002
- 2) M:ome mission statement; for more information reference [www.mome.org](http://www.mome.org)
- 3) Ghandour, Marwan, Editors Cheng, Renee, Tripeny, Patrick J. GETTING REAL: DESIGN ETHOS NOW. Papers from the 94<sup>th</sup> Annual Meeting of the ACSA, April 2006, Salt Lake City, Utah, ACSA Press, Washington DC, 2006 pp. 309-315
- 4) Lyons, Silas. The Tribune , San Luis Obispo, California. July 6, 2003, Front page , Quote by Jennifer Seals of Rocky Mountain Institute describing the M:ome /Bridge Street Neighborhood
- 5) Santoyo, Larry [www.Earthflow.com](http://www.Earthflow.com) web site information
- 6) For an elaboration on “woonerfs”, refer to British Architect, Ben Hamilton-Baillie, in his lecture on “woonerfs” to the City of Salt Lake City. For example, he states, “ In the Netherlands (where woonerfs originated), 46 percent of trips are made on foot or by bike, and the accident rate there is far lower than in the United States, where only 7 percent of trips are human, not gasoline-powered.” <http://www.cvrti.utah.edu/~macleod/bike/mbac/woonerfs.html>
- 7) Sullivan, Robert. DWELL , San Francisco, California. September, 2006, pp. 195-211 Quote by Andy Wiley-Schwartz, Vice President for Transportation of Project for Public Places
- 8) Krutch, JW, Thoreau; Walden and Other Writings, Bantam Books, NY, 1962

### **Illustration Notes:**

- a) overall view of the bridge street neighborhood looking north with Cerro San Luis (Madonna Mountain) in the background. (watercolour by Tom di Santo)
- b) view of the two and three bedroom attached TOWNM:ome, looking north...with the four bedroom M4 unit and pedestrian path to open space beyond and to the right. (watercolour by Tom di Santo)
- c) site plan of the Bridge Street Neighborhood, showing the Intuitive Mapping Urban Design Strategy as well as the Sustainable Site Features (watercolour by Tom di Santo)
- d) aerial view of the Bridge Street Neighborhood showing Intuitive Mapping Urban Design Strategy (dotted) with Woodbridge Development immediately adjacent and to the right (east), which exhibits a standard abstractly conceived and overly quantified (sub)urban design strategy. (Photo courtesy of the City of San Luis Obispo, watercolour insert by Tom di Santo)

