

## The First Optimum Performance Home

### *The Home*

The Sea Ranch Design Committee imposes upon designers architectural building blocks derived from the original rural structures found on the northern California coast. Designers are expected to apply their creativity to render various arrangements and deviations to arrive at a custom solution that specifically responds to the site. Successful proposals submitted to the Design Committee address the issues

of passive solar positioning, wind, glazing (window) layout, privacy between neighbors, vegetation protection, view preservation, topography and grade changes, roof slopes, appropriate exterior materials and finishes, and other exterior design considerations—all within the building and site design.

A focus of the Optimum Performance Home's design is to stand as a showcase for the "green" movement and demonstrate means of reducing a home's impact on the planet through the use of Low-Impact Development (LID) and environmentally responsible and sustainable building materials. It is hoped that the home will become a case study for a "Green Points Program" suited to the scale of The Sea Ranch.

The home's 3,272-square-foot living space (4,441-square-foot total building "footprint," including garages, covered walkways, courtyard, and decks) will be arranged in a three-building compound using a well-sealed, well-insulated, super-tight building envelope that reduces temperature fluctuations and enhances overall energy efficiency. This arrangement provides for an alcove courtyard protected from the prevailing wind from the northwest. The home is designed with differing spatial experiences throughout to encourage exploration. The home will display innovative interior design and be furnished in a contemporary Frank Lloyd Wright style appropriate to its dimensions. The home design connects the indoors and the outdoors with covered walkways, a courtyard, decks, and a garden to expand livable space, without requiring heating or air conditioning. The home is designed in accordance with biophilic design principles with abundant and excellent use of natural light and natural indigenous landscaping planned. (For an in-depth analysis of the biophilic attributes of the home, please read "Biophilic Design," "Biophilic Design Attributes," and "The Interior Design Process, Part I: Synthesizing Sustainability, Universal Design, And Technology" authored by Julie Stewart-Pollack in Issue 3 (May/June 2006), Issue 4 (July/August 2006), and Issue 10 (July/August 2007), respectively.

The main-floor living area is designed to accommodate the capabilities of all occupants without any challenging physical barriers, even for the elderly and disabled. The home design features a ground-level open plan for the living room, dining room, master bedroom suite, and spacious kitchen with solarium, exhibition cooktops, and home management system. The second building in the compound is designed to accommodate a large state-of-the-art Optimum Performance Home Theatre™ with integrated rear-screen projection room and a home office. The third building will include a twocar and boat garage, workshop, mainlevel guest bathroom, and laundry room. The second level of this building will have two guest bedrooms, a bathroom, and a dedicated library/home theatre/surround music room distinguished by a high-tower feature. To insure universal access to this floor, the design provides for an Otis® Gen2 residential elevator.

The entrance and walkways that connect the three buildings and the solarium will be enclosed with insulated- and solar gain-reduced-tempered glass. There will be a seating area at the vestibule entrance to the home. The main entrance vestibule will serve as an oversized mudroom. The driveway, area around the garage, guest parking, and entrance to the home—as well as all paths—are designed in



accordance with The Sea Ranch guidelines governing exterior hard-surfaced paths. All such surfaces are pervious to virtually eliminate water runoff. The surface will be packed with decorative gravel to enhance the natural appearance of the home's setting. There also will be a dedicated equipment room off the courtyard, which accommodates the Uponor® and WaterFurnace® radiant heating apparatus, TrendSetter® solar hot water storage tanks, Microtherm's Seisco® on-demand electric tankless water heater, and other equipment. The backup Kohler® generator is housed within a separate weather-resistant tower located off the north wall of the two-car garage and guest bedroom, within the fenced dog run. This tower is designed to optimize the northwest wind performance of the PacWind® Seahawk® vertical-axis Savarrius™ wind turbine disguised within (see Part 12, November/December, Issue 12).

The home site is nestled on an almost-acre parcel at the edge of a forested area of the southern section overlooking the Pacific Ocean, offering distant water views. Some of the home's features will include a Benissimo® slate-floor outdoor courtyard, two thick solid hardwood Ipé deck areas, in-ground Dimension One Spa® Amoré Bat hot tub, Finnleo® Finnish sauna, and underground wine cellar. The orientation of the home on the site is designed to take advantage of natural lighting and passive solar heating and cooling. Good site and land planning will result in minimal land disturbance and preservation of natural features and environments.

Landscaping will consist of The Sea Ranch approved indigenous vegetation with low-water requirements and unique water conservation features, including two ponds and a stream supported by rainwater catchment and captured runoff. Site grading has been specifically planned to enhance the project's placement in the watershed, and the design incorporates the principles of Low Impact Development to minimize runoff from impervious surfaces and mimic the natural hydrology in overall effect. The resultant water harvesting will then minimize the use of irrigation, and the increased infiltration and retention will passively support the native landscape. Additionally, a gray water system will be used for undersurface plant irrigation.

### ***The Courtyard***

The courtyard is a focal point of the Optimum Performance Home's three-building compound design. The courtyard creates a villa outdoor living space experience, and is designed in accordance with biophilic design principles with abundant and excellent use of natural light and complementing amenities that contribute to the overall life-enhancing experience the home will nurture. There are six aspects to the design of the courtyard that facilitate such an experience.

- Dimension One Spas' Amoré Bay hot tub
- Finnleo Finish sauna
- Rais & Wittus Firebird Outdoor Fireplace/Grille
- Kohler BodySpa Ten-Jet Tower Shower
- Runco Outdoor Weatherproof High-Definition LCD Display
- KitchenAid Outdoor Kitchen

An integral design element of the courtyard are Dimplex® outdoor Ventura Ceramic Radiant Heaters. Rather than simply heating the air, the Radiant Heaters produce infrared energy, which actually heats the objects in front of them. It works much like the natural energy of the sun. The durable Ceramic Radiant Heater has powerful 240-volt ceramic heating elements that provide effective warming at any outside temperature. The Ventura features silent operation with no distracting visible light output. An adjustable mounting bracket lets one target the heating zone. Three Ventura Ceramic Radiant Heaters will be employed in the courtyard.

### ***Dimension One Spas' Amoré Bay***

The new Dimension One Spas Amoré Bay hot tub will be featured in the courtyard area. The D1 Bay Collection® Amoré Bay is an ultimate performance and comfort spa that employs D1's renown energy efficiency and reliability.

The Vista, California-based company holds in excess of 30 patents that underscore an eco-savvy mentality. D1 was introduced to the Optimum Performance Home project by Michael Galica, owner of the eco-friendly Marin Outdoor Living showroom in Greenbrae, California. Dimension One's Bob Hallm, CEO and co-founder with his wife, Linda, is committed to constantly innovating new sustainability ideas in D1 spas that are environmentally and ergonomically friendly.

In an age when “green” sustainability is deemed paramount, Dimension One Spas leads the environmental crusade in the home hot tub market by creating products that exemplify sustainable luxury. Dimension One Spas incorporate such body experience features as:

- **Hydronomics:** D1’s extensive study of human anatomy, ergonomics, fluid mechanics, aquatic massage, acupressure, and reflexing led them to develop a new field they named “hydronomics”—the study of human energy transfer within an aquatic environment. Using state-of-the-art modeling software, D1 engineers design hot tubs in virtual space, giving them unprecedented control over materials, and thus ensuring the ultimate in comfort.
- **Dynamic Massage Sequencer:** Introduced in 1999, DMS was the world’s first programmable hydrotherapy massager. The built-in massager focuses on six specific therapy zones and offers pause and speed controls.
- **Ultralounge:** This “spa-within-a-spa” lounge chair-inspired section of the tub features patented BioForm™ seating in a “no-float” angle design to keep occupants solidly in their seats instead of buoyantly drifting about; sculpted leg contours; and acupressure therapy for wrists and hands. These features provide the ultimate in full-body hydrotherapy.
- **Neck Jet Pillow:** The first and only height-adjustable spa neck jet pillow.

Dimension One Spas incorporate such clean energy features as:

- **EnviroTect™:** The Ultralife slipresistant interior of each hot tub is surrounded by a durable, all-weather exterior made from 100 percent recycled plastic milk containers. EnviroTect is the most environmentally friendly exterior available for spas today. This 100 percent recycled material is environmentally stable (HDPE); does not give off any harmful fumes; and is highly recommended by the Healthy Building Network, a national organization of green building professionals and environmental health activists. EnviroTect requires virtually no maintenance and unlike wood, the all-weather EnviroTect requires no staining or painting. EnviroTect is exceptionally resistant to moisture, fading, insects, splintering, warping, and other hazards of environmental exposure.
- **Vision® System Cartridge:** The Vision System provides a natural clean-water alternative to harsh, chemical-based filter systems. The Vision Cartridge uses silver catalyst technology to kill 99.96 percent of bacteria on contact. The cartridge lasts up to six months, significantly reducing chemical maintenance.
- **Water-Management Technology:** D1 water management technology cuts down the need for chlorine in the spa water from three to five parts per million to 1 ppm, which means no more dry, itchy skin, faded swimwear, irritated eyes, or strong odors from chlorine.
- **UltraPure® Plus™ Water Management System:** D1 Amoré Bay spa features the UltraPure Plus Water Management System, the most sophisticated water-management system in the industry. The five step filtration system purifies the spa water 24/7 and includes the smart use of an ozonator, an ultraviolet (UV) germicidal light, zinc and silver minerals, chlorine (to totally eliminate surface bacteria), and a filter. D1’s patented system provides the cleanest, clearest spa water in the industry. Without this balanced, carefully engineered system more chemicals and maintenance time would be required, and the water would still not look as clean and clear.

The UltraPure system uses low-power, 98-watt circulation pumps to purify the tub’s water. Eighty-four percent of the power that UltraPure uses is returned back to the water as heat.

The water source will be filtered rainwater harvested off the Evergreen slate roofs (see Part VI, November/December 2006, Issue 6).

- **Fast Flo Heater:** D1 spas incorporate the most durable and reliable spa heater on the market. The variable output on this stainless steel heater provides optimal heat recovery and lower energy consumption.
- **100 Percent Insulated:** D1 was the first company to manufacture a fully insulated spa for in-ground or above-ground use. The hot tubs are 100 percent foam insulated with closed-cell urethane—used in commercial freezers—not only absorbing equipment noise for the quietest operation possible, but also minimizing heat loss to ensure the lowest energy costs. Additionally, high-density E-Z Lifter foam covers are precision fitted with linear heat seal seams to prevent heat loss. D1 spas use up to 85 percent less energy than traditional in-ground, non-insulated spas.

- **HydraMax® Pumps:** The D1 aquatic massage system is backed by powerful HydraMax aquatic jet pumps. These pumps are expertly engineered and plumbed for 100 percent efficiency—this means a smaller, more efficient, and nearly silent pump that retains the jet power of its larger counterparts.
- **M•Drive:** D1's cutting-edge M•Drive, available exclusively on the company's high-end Bay Collection series hot tubs is a highly intuitive, menu-driven spa controller, which provides effortless control over virtually every aspect of a spa's operations and functions. M•Drive features large buttons; a wide, brightly lit, easy-to-read screen; and an intuitive menu structure that makes the M•Drive an ergonomically friendly spa controller.

The Amoré Bay features the transformative use of lights, sights, sounds, colors, and Liquid FX hot water effects to evoke a transcendent hot tub experience unlike any other. Other features include roomy, barrier-free seating; bar top accent lighting; stylish architectural uplighting; the industry's first and only four-foot water brook; three water fountains; and two UltraLounges.

At the recent Aqua Expo at the Mandalay Bay Resort in Las Vegas, I met with Amoré Bay designer Victor Walker and Michael Mantell, PhD, a successful psychologist and D1 consultant. We discussed Amoré Bay design's eco-friendly concept and the "Shangri-La" features, which include curvaceous soft, smooth lines and edges; 64 strategically placed accent ring jets; a special 8-foot "playground" area; underwater massage lounges with acupuncture massage jets; a hand-held massager; cup holder; and mood lighting.

Impressively, the experience is delivered at a heating cost of approximately \$15.00 a month. We also discussed "water" as a desirable biophilic attribute and various health topics such as oxytocin—the mammalian hormone known by sex researchers as the "cuddle hormone," and believed, by some researchers, to be a beneficial link between oxytocin and social anxiety, memory control, cardiovascular functions, and thermoregulation in menopausal women. Wow! We also discussed water's power to invigorate the spirit, replenish the soul, refresh the mind, and relax the body, while helping to wash away tension, rekindling relationships, and igniting passions.

Dimension One Spas' Amoré Bay hot tub seats up to seven adults with a water capacity of 415 gallons. The spa will be sunken into an area of the courtyard so that the spa's ledge is at a seating height for easier accessibility. Users simply sit on the spa's wraparound IPE deck seating and slide over into the spa. The spa area design complies with the universal design accessibility standards for the home. The Valentine 2008 limited edition Amoré Bay spa will be installed. The tub's color is Candy Apple Red with EnviroTect tan architectural trim.