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LIVE BENEATH THE SEA

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LIVING

A radical new yacht design opens the window on Neptune's realm.

BY JIM WILSON, Illustration by Paul DiMare

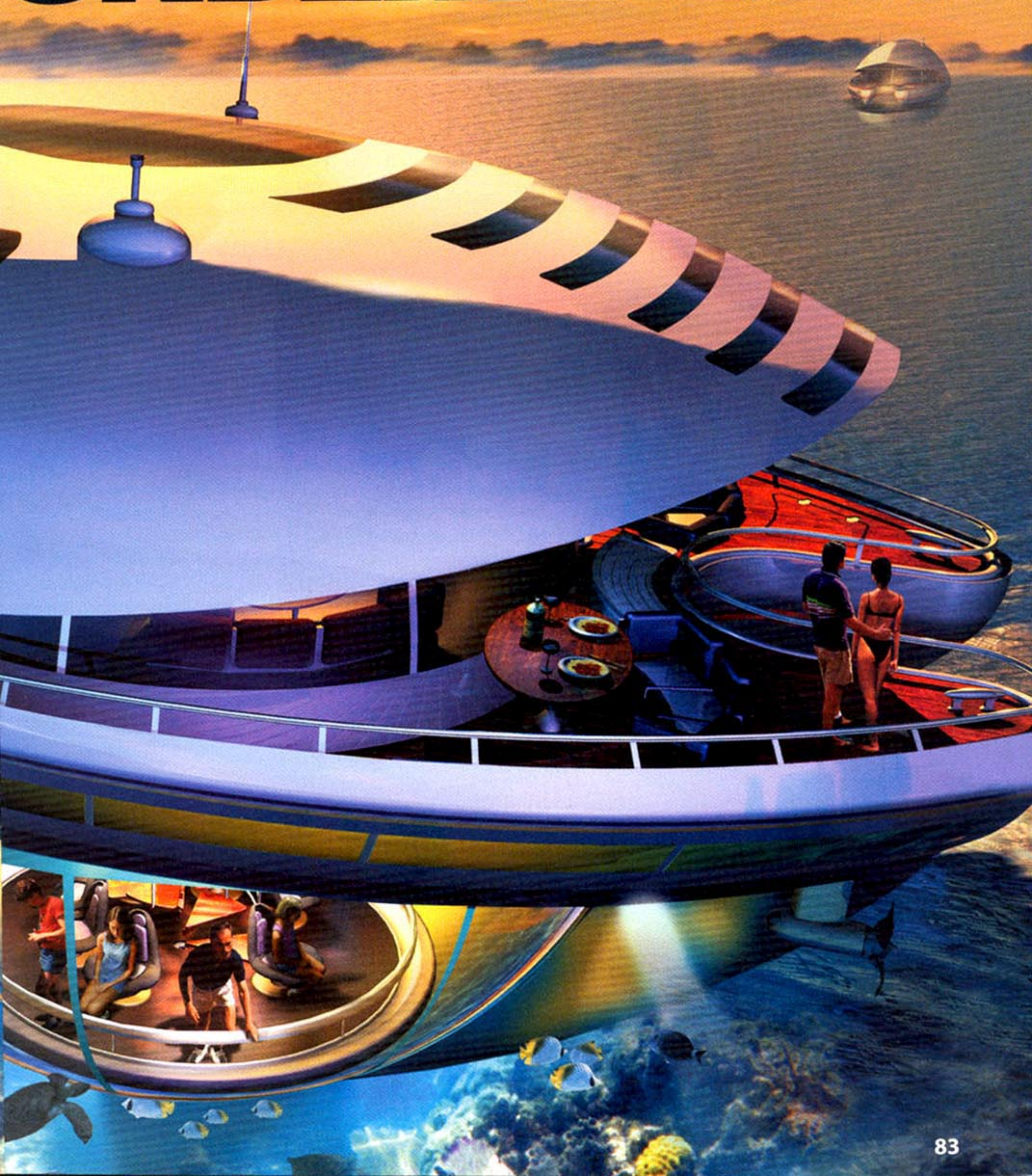
Life, say the experts, began in the sea. And if the way we spend our vacations is an accurate indicator, there are few things we enjoy more than revisiting our submerged roots. Cavorting with dolphins, badgering sharks from the safety of steel cages and photographing exotic fish through the portholes of tourist submarines fascinates

COVER STORY

landlubbers from Prague to Peoria. For those who find these forays into Neptune's realm too brief, Italian naval architect Giancarlo Zema has the perfect dream home, the Trilobis 65. Part yacht and part submarine, it could convince Capt. Nemo to hang a "for sale" sign on the *Nautilus*.

"The main aim of the project is to allow anyone to live in a unique environment through a self-sufficient, non-polluting dwelling that exists in unison with their ocean surrounding," Zema tells *POPULAR MECHANICS*. At first glance, the Trilobis looks as if it would be more at home soaring into the sky than plying the waters of atolls, bays and maritime parks. Looking at a computer image of the bow conjures up visions of the flying saucers in 1950s science fiction films. The Trilobis's blueprints, however, reveal a nautical heritage that reaches back to the humble dugout while simultaneously embracing 21st century technologies that include high-strength composites and nonpolluting hydrogen fuels.

UNDERWATER





Circular Living

Perhaps the most striking feature of Zema's design is one that reflects his willing recognition of the great unspoken truth about luxury yachts. Powerful engines and sleek hulls aside, these vessels typically stick close to home. Acknowledging the fact that well-heeled mariners often prefer to keep their floating palaces moored inches from the dock, Zema also designed a special type of marina that will enable like-minded Trilobis owners to create their own floating villages. The traditional rectangular dock will disappear, to be replaced by a roughly 60-ft.-dia. circular island in the shape of a 6-tooth gear, into which individual yachts fit like pieces of a jigsaw puzzle.

Stepping off the floating island, yachtsmen will ascend a few steps and find themselves on an expansive circular deck. At this level, the Trilobis resembles a deviled egg, measuring about 65 ft. from stem to stern and 42 ft. from port to starboard. Zema has divided the interior space into four functionally different levels, connected by a spiral stairway that runs through the yacht's centerline.

The top of the stairway opens onto the driving deck. Housing the helm, communications equipment and navigation gear, it offers the best view of the sea from its elevation of about 11 ft. above the waterline. The space is dominated by a massive glass wall that begins above the stairway and arcs gently over the forward seating area

The observation bulb gives yachtsmen the opportunity to view marine life, day or night, without getting their feet wet.



"At first glance, the Trilobis looks as if it would be more at home soaring into the sky."

before disappearing into the deck below. Ordinarily, so large an expanse of glass would pose a heating problem, but this is no ordinary window. It is a sandwich of two layers of tempered glass and an electrolyte with a very unusual property. With the turn of a dial, you can change the voltage flowing through the electrolyte material, which is encased between the panes, altering the tint of the window or blacking it out entirely. Power for the windows and the ship's electrical systems comes from photovoltaic panels, manufactured by Siemens, that are integrated into a foam-reinforced fiberglass skin. At

interior and exterior spaces. Sliding glass doors fully retract, opening onto a teak deck.

Returning inside and following the stairway down one more flight leads to what is known as the night zone. The Trilobis sleeps six, with a premium on privacy. The design calls for two single and two double bedrooms, each with a private bathroom. With the deck at this level beginning 3 ft. below the waterline, the wraparound window cuts off at eye level.

This level also houses the yacht's propulsion system, which consists of two electric motors. Each is rated at

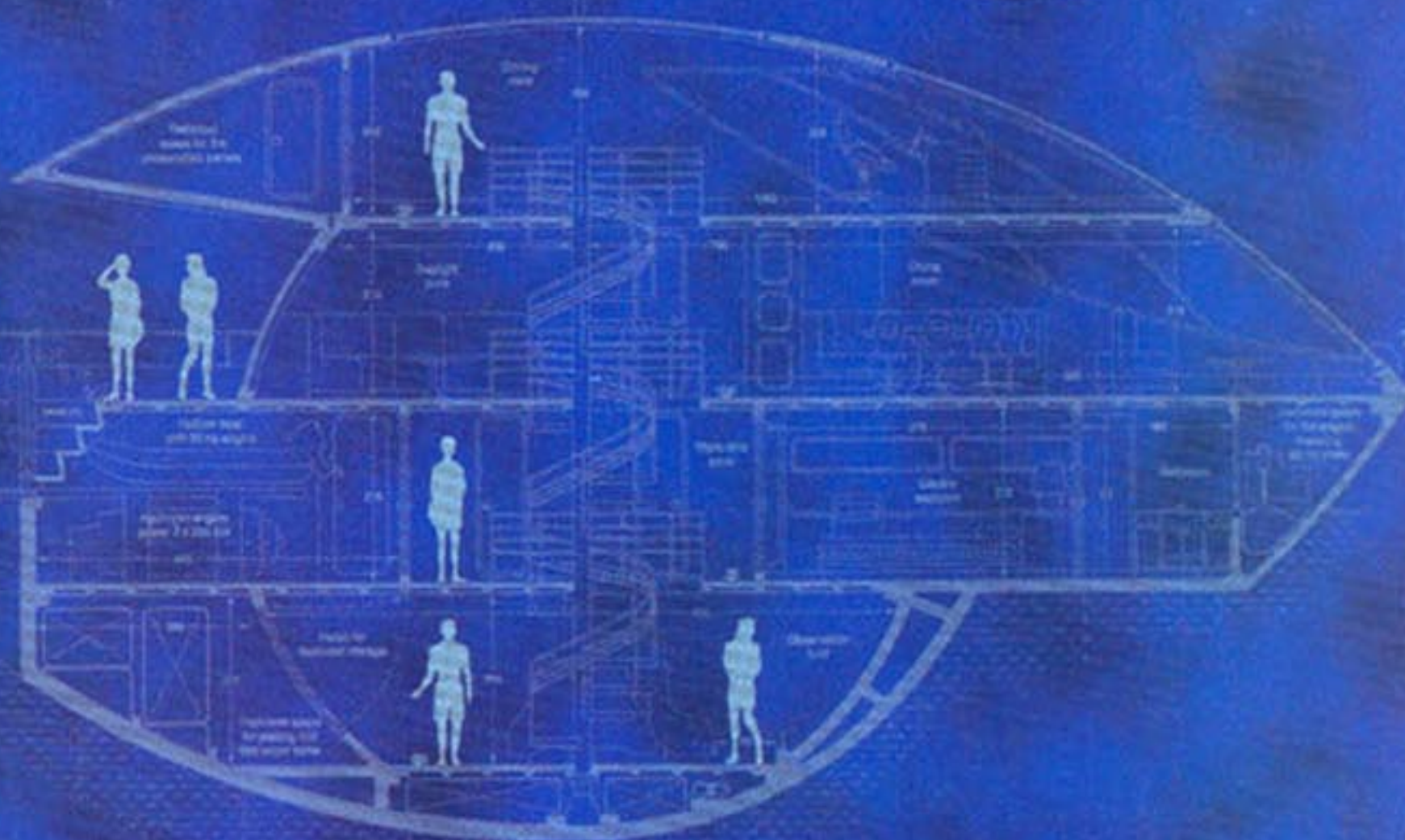
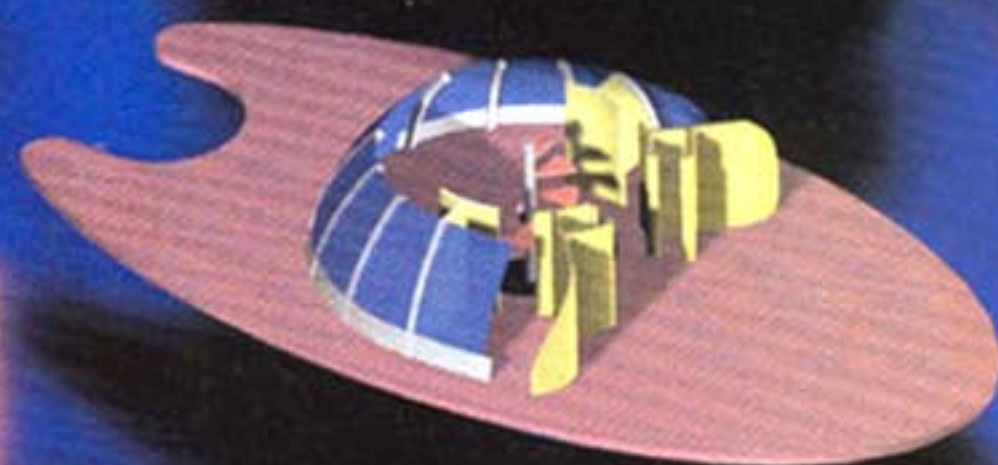
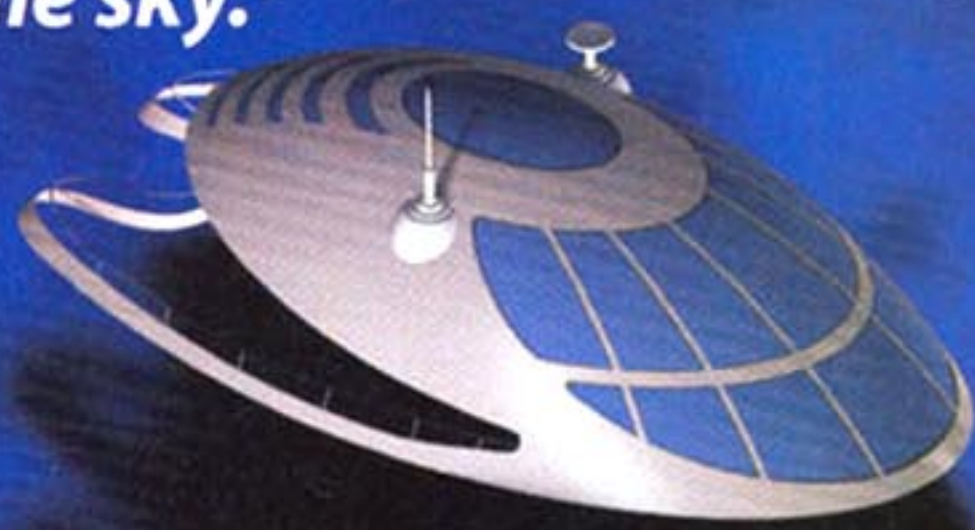


night and on cloudy days, power comes from batteries, with an inverter converting DC into AC for low-loss power distribution.

Day And Night

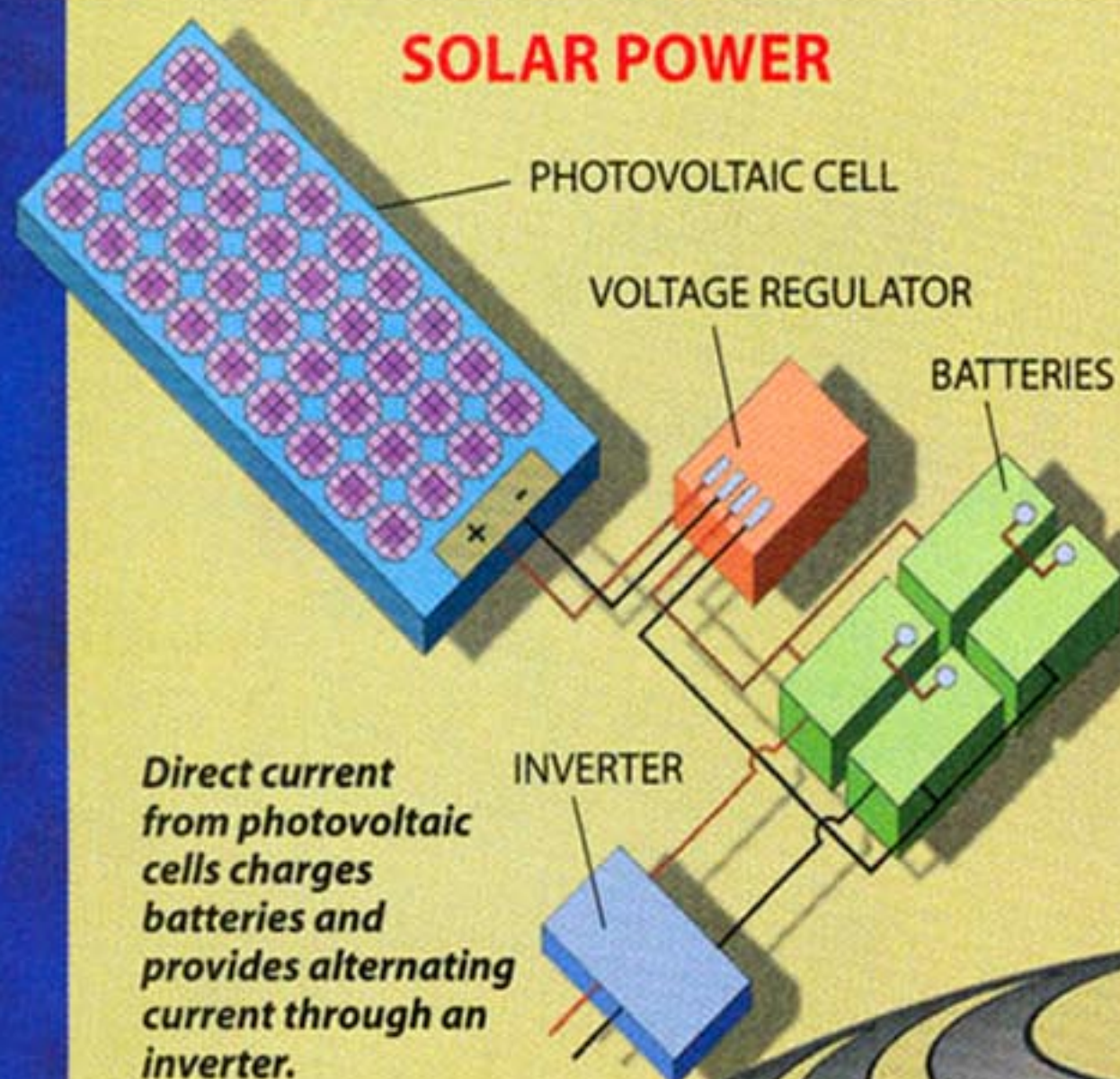
Descending from the top to the craft's third level, yachtsmen will enter what Zema calls the day area. Its use of space is a reminder that spherical structures are more efficient than rectangular ones. As with the space above it, the day area is surrounded by self-shading glass, offering a panoramic view from the gourmet kitchen, formal dining area and three seating groups. On this level, the spiral stairway serves a secondary function of separating

The Trilobis puts a premium on expansive exterior views and personal luxury.

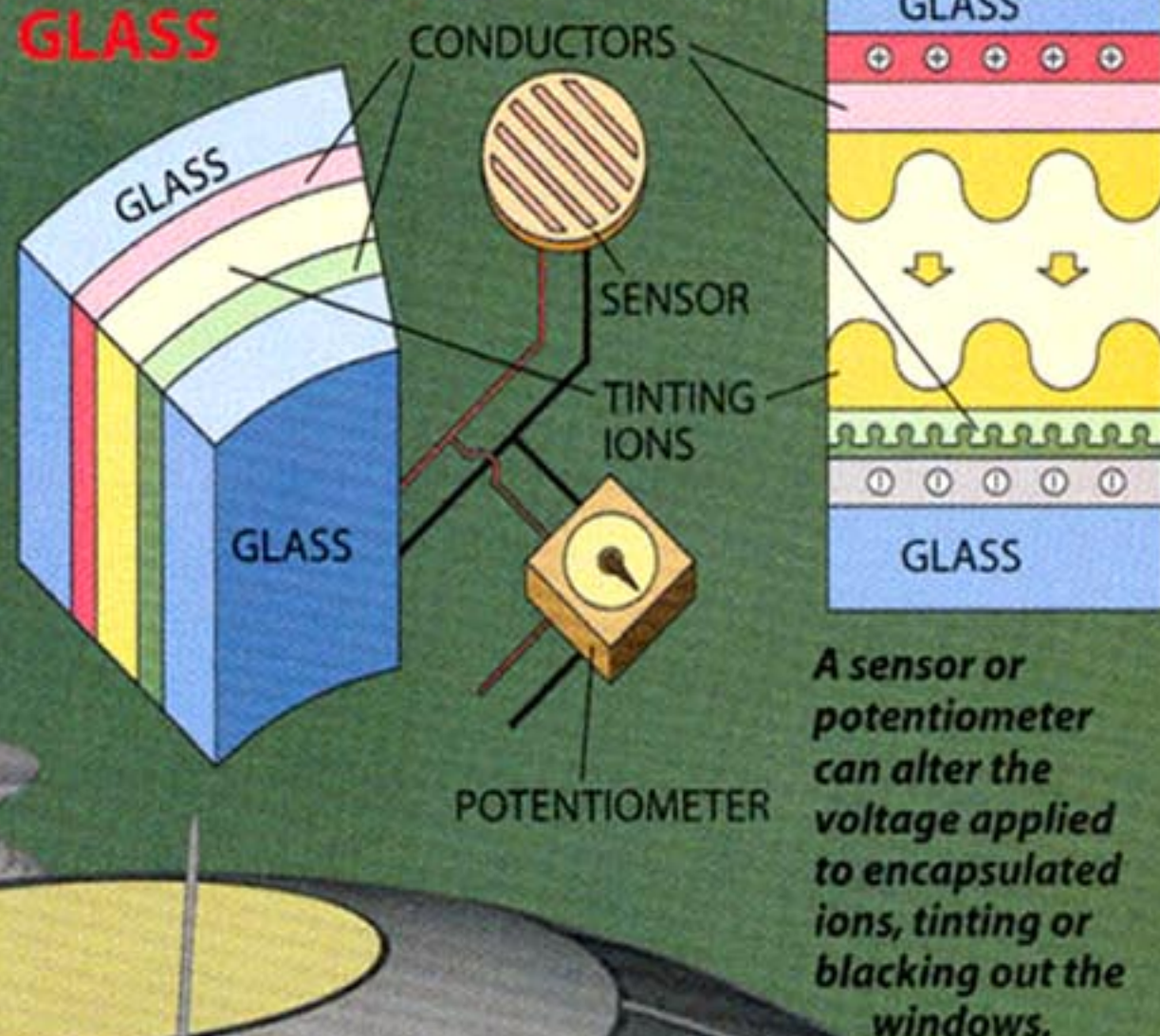


"Zema's vision is to make the Trilobis environmentally friendly."

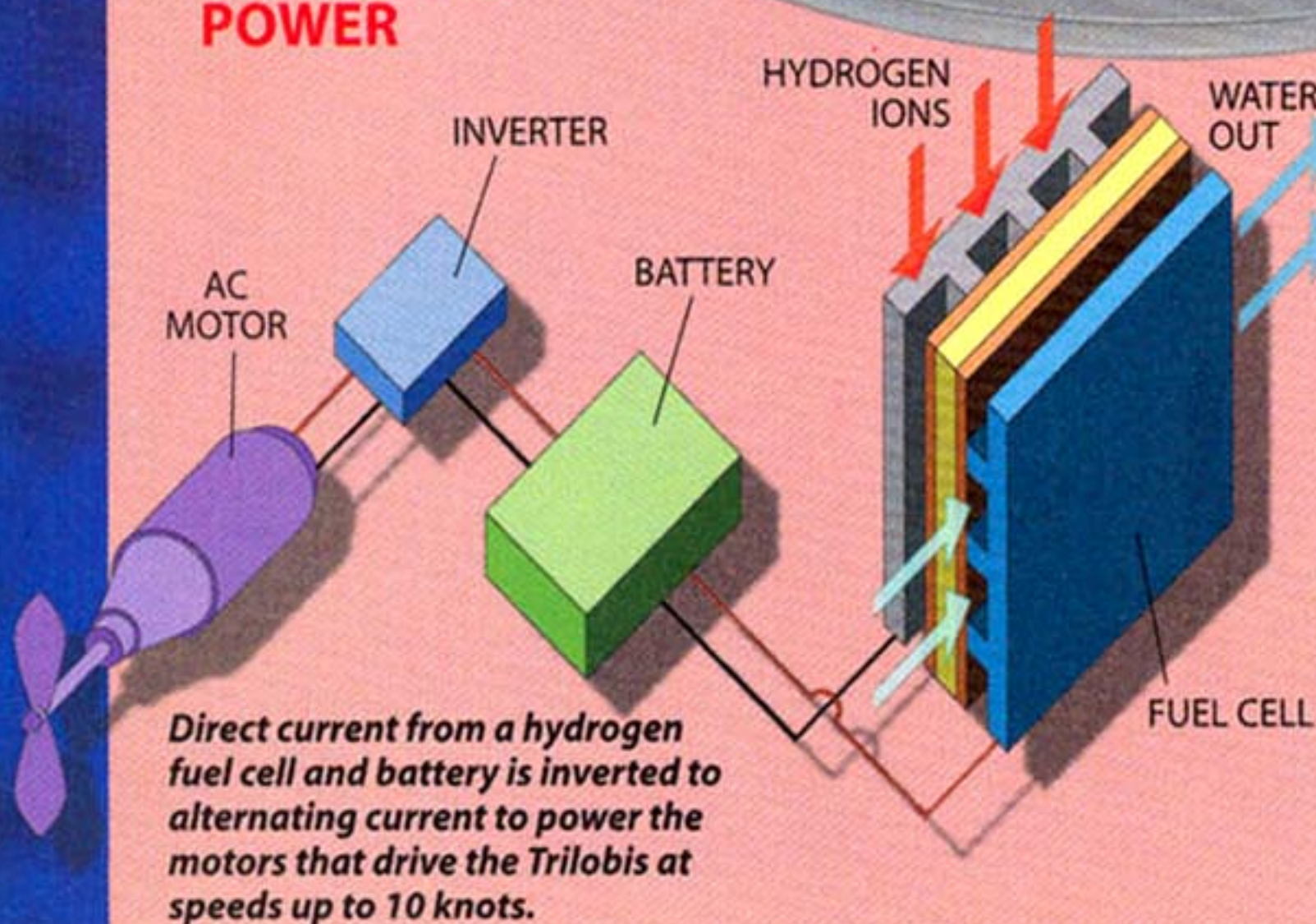
SOLAR POWER



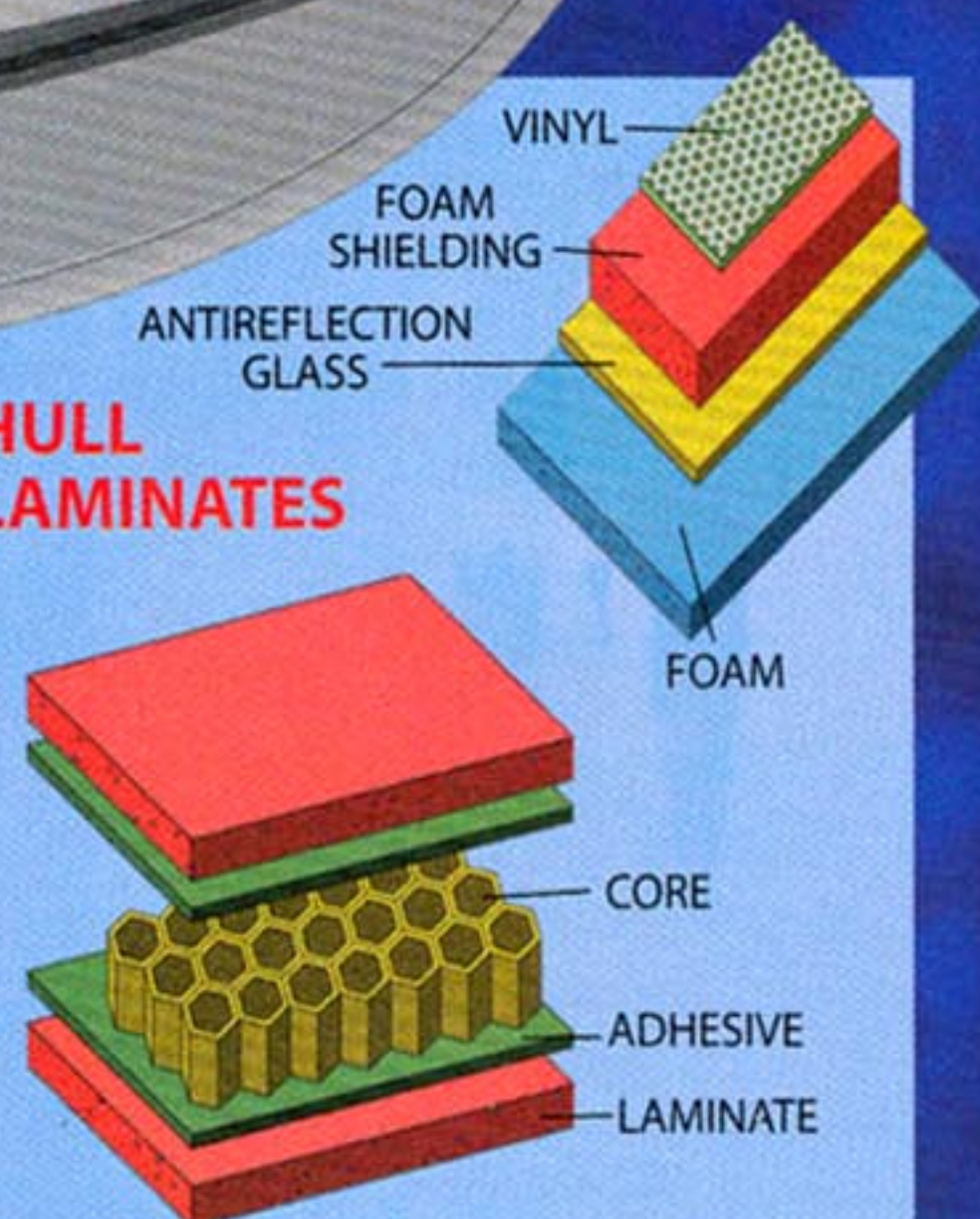
PHOTOVOLTAIC GLASS



HYDROGEN POWER



HULL LAMINATES



Composite materials are engineered to provide sound damping (top) and structural integrity (above).

about 300 hp. They are powered by hydrogen-fed Ballard fuel cells. The hydrogen for the fuel cells will be stored in a pair of 240-gal. tanks located just aft of the single bedrooms. The fuel supply is not intended for ocean crossings, but to be sufficient for moving the yacht to nearby reefs to explore seasonal changes in marine life and catch a true fish-eyes view of unusual migrating species.

Ocean Depths

The most distinctive feature of the Trilobis is its fully submerged first level, the observation bulb. Like the driving deck and day area above, it offers a commanding and unobstructed view of the sea. Only here, that view begins 10 ft. below the waterline. This is the smallest of the levels, just big enough for six chairs. Built to the same technical standards as tourist submarines, it is a thick glass enclosure that provides a 360° view. So that this area can be used when there's no sunlight, the Trilobis has a ring of 200-watt spotlights, angled away from the observation bulb, to illuminate any sea life swimming directly in front of the viewers. The second set of spotlights, placed just below the deck level, lights the reefs below.

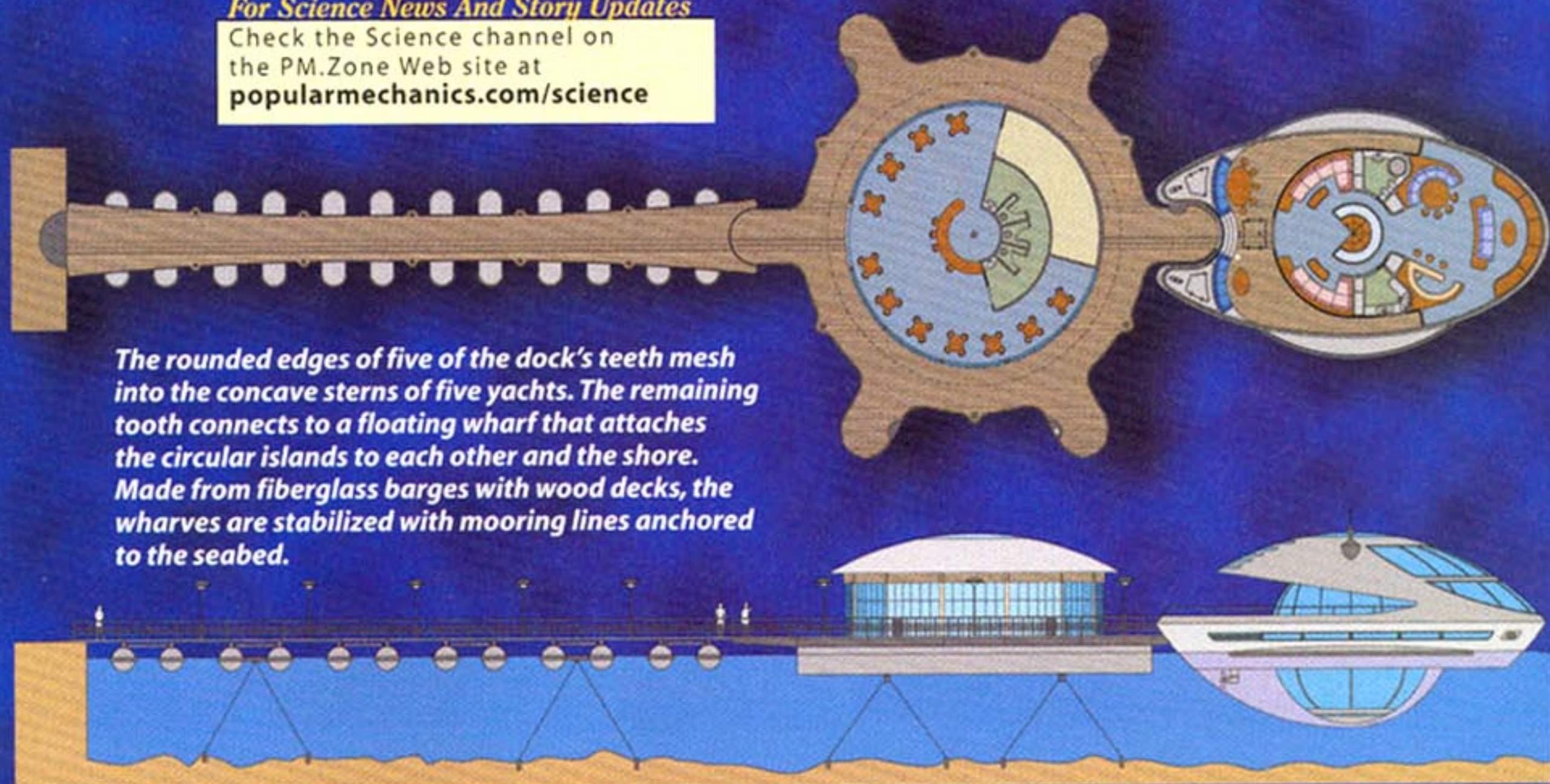
Zema is several years from building the first Trilobis. Most likely, it will be constructed in Vancouver, British Columbia, where he has set up a marketing relationship with a local representative. The location may seem like an unusual choice, but the region has the two essential ingredi-

ents needed to make the Trilobis project a success. The first is its wealth of small inlets and bays. The second is a pool of wealthy yacht owners, one of whom may be willing to invest the \$4 million to \$5 million it will take to launch yachting into the 21st century.

FM

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The rounded edges of five of the dock's teeth mesh into the concave sterns of five yachts. The remaining tooth connects to a floating wharf that attaches the circular islands to each other and the shore. Made from fiberglass barges with wood decks, the wharves are stabilized with mooring lines anchored to the seabed.