Cities of the future will need to be ever more interconnected yet also more self-reliant. To accommodate a projected doubling of population by 2108 while resisting further outward sprawl, the Bay Area and San Francisco together will require a new infrastructural network that is able to collect and distribute water, power, fuel, and goods while also accommodating the transport of residents and tourists.

Symbiotic and multi-scalar, SF Hydro-Net is proposed as an inhabitable infrastructure that organizes critical flows of the city. It provides an underground arterial circulation network for hydrogen-fueled hover-cars, removing higher-speed traffic from city streets. Hydro-Net emerges above ground at the waterfront and multiple neighborhood nodal points. Here, new architectures bloom at key locales in the form of opportunistic urban caves, reeds and outcroppings that link the above and below-ground worlds, fostering new social spaces and urban forms fed by Hydro-Net’s resources and connectivity.

Hydro-Net also serves to simultaneously collect, distribute and store freshwater, geothermal energy and hydrogen fuel. Built with automated drilling robots, Hydro-Net’s tunnel walls are structured using carbon nanotube technology. Algae ponds will reoccupy areas along the bay impacted by the projected 5-meter water-level rise of global climate change. This new aquaculture zone provides the raw material for the production of hydrogen fuel that is stored and distributed within the nanotube tunnel walls.
New high-density housing co-exists with this aquaculture zone as a forest of sinuous towers. Hydro-Net becomes a device to tap the vast reserves of water and power housed within the earth below San Francisco, storing and distributing energy and fresh water from existing underground geothermal fields and aquifers stretching from Golden Gate Park to San Francisco International Airport. Replacing today’s street paving that sends rainwater runoff into the sewer, new porous pavement allows rain to recharge the aquifers. Hydro-Net also links to an array of fog harvesters, diversifying sources of water.

Ultimately, Hydro-Net sponsors new programmatic potentials in its underground nodes and above-ground tendrils, while allowing much of the character of above-ground San Francisco to be preserved and to evolve organically.

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Lisa Iwamoto’s “Hydro-Net” design won the History Channel’s City of the Future regional contest in January 2008. The timed competition asked several teams of architects to design how San Francisco should look in 100 years.
Iwamoto’s design then went up against other regional winners, from Washington, D.C. and Atlanta, in an online public vote to determine which design is the best in the country. Tune in to the season finale of “Cities of the Underworld” on the History Channel on May 5 at 9 p.m. EST to find out which design wins the top prize!