

## The big thinking in condos now is to get small

Urban dwellers get by in new projects where 600 square feet is spacious



Olga Soboleva

Alexandra Gorbokon, a 26-year old public relations executive, has made an offer on her first home, a condo in downtown Chicago. She's looking forward to eliminating her one-hour commute to and from the suburbs and filling her newfound free time with a better gym habit, enjoying her new neighborhood, and serving on a board in her building.

She's a little less excited about squeezing her stuff into her new home's tiny 600 square foot space. But she acknowledges that, at her age and with her modest \$150,000 home price limit, living in a small space is a minor tradeoff for access to an urban lifestyle.

"I'm a little concerned about the size. I think it's easy to grow out of this sort of space," she says. "But I wanted to live in the city while I was still young."

Gorbokon's attitude about real estate is typical of her generation's, says John McIlwain, a senior fellow for housing at The Urban Land Institute in Washington D.C. McIlwain says many new in-city condo and apartment buildings are offering smaller footprints to satisfy not only downsizing Baby Boomers but, especially, members of Generation Y who are moving out of dorms and parents' places and setting up their own households. Generation Y, he says, views a home's location as more important than its size. They may also see living small and in-city as an environmentally responsible lifestyle.

"For Gen Y, the home is a place to live out of, not to live in," he says. "They don't think of this as a sacrifice. It's just their lifestyle."

### The 'new small'

So with this renter and buyer in mind, numerous condo and apartment developers around the country



are designing new homes with square footages resembling — and even far less than — Gorbokon's new home.

"Based on our experience, while anything under 1000 square feet is considered small nationally, the 'new small' might really average out at somewhere around 500 square feet," says Janel Laban, executive editor for the interiors blog Apartment Therapy, which runs an annual "Small Cool" decorating contest. "Quality of life, which is often strongly affected by location, trumps size every time."

A brief survey of completed and forthcoming buildings shows that with small-space projects, the more expensive a city, the smaller its definition of "small." While mellow Portland, Ore., boasts 520-square foot homes, San Francisco's "small" ranges from 250 to 350 square feet. Vancouver, British Columbia is smallest of all: There, a building called Burns Block will next year start leasing 30 "micro-lofts" with 270-square feet of space and prices starting around \$700 per month. The tiny lofts might offer more room than a basement or converted spare room. Vancouver recently passed rules allowing homeowners to rent out accessory units as small as 195 square feet, according to The National Post.

## Cubicle living

The 98-unit Cubix condominium building in San Francisco's trendy SOMA (South of Market) district has sold about 66 of its tiny loft units, which start at 250 square feet and top out at 350, to a mix of young adults as well as to a surprising number of buyers in their 30s and 40s, says Jim Hurley, a broker with Vanguard Properties who is the project's [sales manager](#).

Cubix's tiny homes range from \$200,000 to \$250,000. A low price for San Francisco.

"The mix of buyers isn't skewed as young as you'd think," Hurley says, noting that many buyers wanted second homes or split their lives between a job in San Francisco and a home elsewhere. "The demographic has been surprisingly broad."

Ranging in price from \$200,000 to \$250,000, the tiny units are stylish — with concrete floors, stainless steel appliances, stone bath surrounds, and energy-efficient passive ventilation. The Cubix



Olga Soboleva



compensates for its units' small size with a transit-friendly location, community amenities (like Cubix's rooftop "glass house" common area), and proximity to services (Whole Foods is nearby). Hurley says one new resident just completed her MBA, happily ditched her car to live downtown, and uses nearby regional train transit, public buses, car-sharing, or her own two feet to get around.

### **Shoebox Lofts**

In Portland, Ore., small is a little bigger. The cheekily-named Shoebox Lofts, set to begin construction later in 2010, will share themes seen at Cubix and other small-footprint developments. The Shoebox's layout includes two buildings linked by a courtyard, along with ground-floor retail and amenities such as bike storage and repair space. Because the building is set on a major bus corridor and in-city bike route, it won't offer car parking but, instead, biker-friendly features like storage and a "bike repair" room. It's within walking or biking distance to the city's artsy Mississippi and Alberta areas.

The 17-unit project's 520-square foot units will offer 16-foot ceilings and prices below \$200,000, says developer Jon Gustafson. Portland-based di Loreto Architecture designed the spaces with a minimalist urban feel, says project designer Chris LoNigro. The look includes concrete floors, steel-joisted ceilings, and floor-to-ceiling "garage door" windows partially shaded with exterior wooden screens.

"It's definitely a different lifestyle choice," Gustafson acknowledges. "I wanted the spaces to be open so the owner could decide how to live in them."

"This sort of smaller space we're building is going to be important to the diversity of a lot of neighborhoods in the future," he says, noting that other condo builders offering larger units can't help but price them for twice as much. "It's a place to get started."

Also forthcoming: Two small-footprint developments in the Bay Area, each comprised of 300-square foot modular-built housing units from Zeta Communities, which has designed and is manufacturing what it calls SmartSpaces from a facility in Sacramento. The two projects — a 22-unit San Francisco condominium complex and a Berkeley apartment community — are currently "on hold" given the market, says Zeta Communities spokesperson Shilpa Sankaran.

"The demand is there," she says. "There's a high percentage of people in the San Francisco area who are single and can live in these units."

### **Trend toward downsizing**

The push to introduce smaller-footprint homes is reflective of the reversal in home size that's taken



place in recent years, says Stephen Melman, a spokesman for the [National Association of Home Builders](#) in Washington D.C. Melman, citing census data, says that the median size of newly-built condominiums peaked at 1,472 square feet in 2007, but fell to 1,355 square feet in 2008. (2009 data aren't yet available.)

Indeed, buyers of smaller condos reason that, when and if they tire of a small space, they can rent it. Condominium associations of micro-unit buildings sometimes anticipate that owners of these units will, eventually, move up and out and may want to sublet. Cubix will let owners sublet units, but for 30 or more days at a time so as to prevent excess turnover or vacation renting, Hurley says.

"I made a big down payment and sought out permission to rent my place down the line," says Gorbokon, the Chicago buyer, who, like many builders of small-footprint spaces, is planning ahead for a future where there will be plenty of demand for small spaces among those seeking big-city living.

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## Silicon Valley tech leaders are reinventing themselves for a cleantech revolution

By Scott Duke Harris

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Brent Constantz's last startup, Skeletal Kinetics, created a bone-fracture cement that costs \$200 per gram and helps orthopedic surgeons heal their patients.

His new startup aims to churn out billions of tons of market-price construction cement that Constantz says can help heal planet Earth by embedding billions of tons of greenhouse gases into concrete. And it will deliver desalinated water as a byproduct.

Constantz is founder and CEO of Calera, a 3-year-old Los Gatos-based startup with a demonstration operation at a Moss Landing facility that once helped make incendiary bombs during World War II. His move from the medical device field illustrates how Silicon Valley's dynamic, risk-taking business culture has quickly turned a region best known for computer technology and life sciences into America's top incubator of clean, green innovations.

Reinvention is at the heart of cleantech, and several of the sector's leading entrepreneurs have transformed themselves to pursue these massive new market opportunities.

Elon Musk, the CEO of electric carmaker Tesla Motors and chairman of Solar City, first prospered as a young dot-com mogul whose credits include PayPal. Better Place, a buzz-making electric car services startup in Palo Alto, was founded by Shai Agassi, who previously had been a rising executive at software giant SAP. Bloom Energy, an innovator in fuel cells, is led by K.R. Sridhar, formerly a University of Arizona professor who helped NASA explore the potential of life-sustaining technologies for Mars.

Marc Porat had been a key player at Apple and an e-commerce entrepreneur before launching three green building materials startups — Serious Materials, Zeta Communities and CalStar Products. Kevin Surace, the CEO of Serious Materials, had previously led an e-commerce company.

As Surace tells it, he did not have great expectations when he accepted Porat's invitation in 2002 to build a business around a polymer patent: "It started out as a hobby," he said.

Today, Serious Materials is producing energy-saving glass, window and drywall products at five manufacturing facilities in California, Colorado, Illinois and Pennsylvania. The company has raised more than \$120 million in venture capital and won praise from the Obama administration for creating green jobs amid environmental and economic troubles.

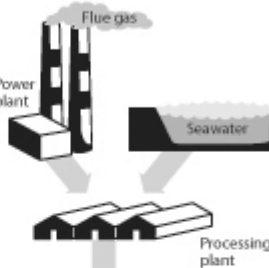
Several valley entrepreneurs see potential in reinventing "the built environment." Conventional means of producing cement, bricks and drywall are energy-intensive and give off vast amounts of carbon dioxide, which scientists view as the chief accelerant of climate change. Surace and Porat cite a Department of Energy report that found

**Concrete ways of reducing emissions**

The traditional method of producing cement requires that limestone be mined and heated to 2,500 degrees, which releases enormous amounts of carbon dioxide into the atmosphere. Calera aims to produce cement differently by transforming power plant exhaust into concrete, thereby reducing carbon in the atmosphere and eliminating destructive mining. A look at its process:

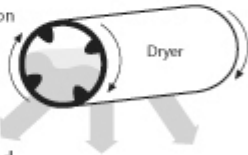
**1 The raw materials**

Billions of tons of carbon dioxide from power plant flue gas emissions are combined with seawater to produce carbonic acid. Further refinement produces a slurry of solid calcium, magnesium carbonates and wastewater.



**2 Drying**

Dryers use excess heat created by power generation from the plant to dry the slurry, reducing energy usage. Wastewater is separated and sent to be desalinated and cleaned.



**3 Products produced**



**Cement**  
Once dried, Calera cement is much like marine cement, which is made by coral to produce its shell and reefs. The cement can replace Portland cement, the traditional "glue" in concrete.



**Aggregates**  
Rock-like solids can be used as aggregates, the main ingredient in concrete. A typical concrete mixture is 20 percent water and cement and the rest is aggregate like sand or gravel.



**Fresh water**  
Because the wastewater is stripped of calcium and magnesium, it is easier to desalinate and filter it into fresh, potable water.

Source: Calera and Scientific American

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the full life-cycle of buildings, roads and bridges — the production of materials, the construction and operation — accounts for 51 percent of the nation's energy use.

Constantz, who is also a consulting professor at Stanford, said it was at Stanford's Woods Institute for the Environment that he first became aware that the cement industry produces 5 percent of the world's carbon dioxide emission, ranking it a third leading cause behind transportation and power plants. Constantz developed a radically different chemical process that eliminates carbon dioxide production.

Then he placed a call to venture capitalist Vinod Khosla, whom he had known since the 1980s, when Khosla was among the founders of Sun Microsystems. Khosla, known for investing in experimental technologies aimed at big markets, quickly embraced the project and has provided an undisclosed amount of funding.

Calera was founded in 2007 to bring Constantz's brainstorm to market. While conventional cement production requires kilns that heat limestone to 1,400 degrees Celsius, Calera's process recycles power plant emissions, scrubbing the carbon dioxide with alkaline water to create a raw material for cement. The result, Constantz says, is a "negative carbon" product because it both cleanses power plant emissions and eliminates carbon dioxide in cement production.

At its demo operation beside Dynegy's natural gas-burning power plant at Moss Landing, Calera is fed by two old pipelines with seawater and a new pipeline from the power plant that redirects 10 percent of its flue gases. (The goal is to eventually use it all.) The chemical process, which Constantz says is akin to converting milk into powdered milk, produces cement powder. The byproduct of desalinated water is sold to the Pajaro Valley Water Management Agency or returned to the ocean.

Calera also has pilot projects in Australia, using underground brine water, and in Dubai, using seawater. In those locales, Constantz said, the water byproduct is a much-coveted bonus. Calera has inked a partnership with Bechtel, the San Francisco-based construction giant, to bring the technology to global market. Power plant operators facing pressure to curb carbon emissions may do so by getting into the cement business.

Calera also spread the word by delivering a set of benches made from its green concrete to the plaza outside the recent Copenhagen climate summit. Viewed from above, the benches spell: HOPE.

## Road to Recovery: Sacramento area aims to be green tech center

By Jim Downing

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When it comes to the nation's efforts to curb global warming, few places are more important than [Sacramento](#); it is here that [California's](#) groundbreaking laws and regulations are written.

That, local business leaders say, gives the region a major boost in its effort to become a hub of the developing green economy. They are looking to green tech – also known as clean tech – as a way to strengthen and diversify [Sacramento's](#) job base.

"The hope is that in clean tech, companies will want to be located in [Sacramento](#) to be closer to the regulatory process," said [Steven Currall](#), dean of the Graduate School of Management at the [University of California, Davis](#).

In other ways, though, [Sacramento](#) seems an unlikely candidate to emerge a winner among the many regions trying to build a green-tech industry. [Sacramento](#) lags the [Bay Area](#) when it comes to raising money for new companies, and its previous efforts to establish itself in the high-tech and biotechnology industries faltered.

Still, business development officials say green-tech companies are showing unprecedented interest in opening shop in [Sacramento](#), despite the bad economy.

"It's a wave of activity like we've never seen," said [Bob Burris](#), deputy director of the [Sacramento Area Trade and Commerce Organization](#), the region's nonprofit business recruiter.

Although there's no official method for counting green jobs, one leading advocacy group says [Sacramento](#) is doing well on that front. Palo Alto-based nonprofit Next 10 recently released a study concluding that [Sacramento](#) led all [California](#) regions in percentage growth of green jobs from 1995 to 2008, with an 87 percent jump from 7,019 to 13,102.

By Next 10's count, [Sacramento](#) has more green jobs per capita than the [Bay Area](#), [Los Angeles](#) or [San Diego](#).

### [UCD, SMUD have a role](#)

The [Sacramento](#) region is now seeded with at least 70 clean-energy companies, many of them small startups. They are engaged in a variety of endeavors related to cutting [energy use](#), harvesting energy from the sun or developing new sources of energy, such as plants or [hydrogen fuel cells](#).

Whether these firms will eventually grow to hire thousands more people remains an unknown.

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In addition to its role as the place where climate change rules are made, Sacramento has other advantages. UC Davis is an internationally known center for energy innovation, and the Sacramento Municipal Utility District recently landed \$127 million in federal stimulus funds to build one of the nation's most advanced electricity networks.

The abundance of publicly owned buildings in Sacramento also creates a market for energy-efficient technologies. California state government, in particular, has been aggressive about requiring energy efficiency in new buildings, and Sacramento has one of the highest concentrations of buildings certified by the U.S. Green Building Council.

Not to mention that the region has plenty of sunshine, making it an ideal location for solar installations. Mike Anderson, vice president of marketing for Solar Power Inc., a Roseville solar company, called the Sacramento region "one of the bright spots on the planet."

It's not clear that those advantages will be enough to build a job-creating economic engine, however. The credit crunch and recession have made it tougher for any company to grow, and clean-tech firms face that same headwind. While environmentally friendly industry has been much touted as a potential bright spot in a largely gloomy economy, Sacramento has not been the only city to notice.

"Every single region of the state has a green jobs strategy," said Michael Bernick, a senior fellow at the Milken Institute and former chief of the state Employment Development Department. "There's probably something in there, but it's a strategy that everyone is pursuing."

#### **Bay Area has venture cash**

While Sacramento is a policy and regulatory powerhouse for the clean-tech sector, it doesn't have a reputation as an incubator for new companies. The consulting firm Clean Edge recently ranked Sacramento 10th in the nation for clean-tech job activity – partly on the strength of public-sector employment – but the area wasn't in the top 20 for venture capital investment.

"It's no secret that you're pretty far behind the Bay Area," which attracts more funding for emerging clean-tech companies than any region in the nation, said Ron Pernick, managing director at Clean Edge in Portland, Ore.

Still, Pernick said, simply being in California improves Sacramento's clean-tech job prospects, because the state is by far the national leader in the sector – thanks in large part to the aggressive renewable-energy, efficiency and greenhouse-gas policies coming out of the Capitol and state agencies.

Those policies help to ensure a demand for the products clean-tech companies deliver. Federal stimulus spending in the sector has further brightened prospects.

In Rancho Cordova, Residential Control Systems Inc., which makes smart-grid-ready thermostats and other efficiency-related products, had to lay off some employees this year but expects to be back to full staffing this

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spring. By next summer, when economic stimulus funds for smart grid and government energy efficiency projects finally come through, company President Michael Kuhlmann expects to be adding staff to keep up with orders.

"We feel good. We just hope we don't get drowned" by the wave of business, Kuhlmann said.

Quantum Energy Solutions, an energy-efficiency retrofitter in Sacramento, is seeing orders surge. The company recently won a \$100,000 contract from Holiday Inn to install ultra-efficient LED lighting.

President Jim Collins said he expects business to continue to improve as local governments begin spending stimulus dollars allocated to energy-efficiency measures.

In Davis, startup Octus Energy is hoping to build a business by cutting large buildings' energy bills using a bundle of efficiency technologies, many developed at UC Davis. **San Francisco-based ZETA Communities, meanwhile, has set up shop in a former hangar at McClellan Park, where its crew is turning out modular buildings that use no more energy than they produce.**

#### **Solar, ethanol setbacks**

At this point, most clean-tech companies in Sacramento are small startups. Even with the prospect of federal stimulus dollars, lack of capital limits growth in the sector.

Collins of Quantum Energy said the credit crunch continues to crimp his 12-employee company's prospects.

"To be honest, the only thing keeping us from broadening our horizons is finding capital," Collins said.

Just over a year ago, crews at McClellan Park working for OptiSolar Inc. were building what was supposed to become the continent's biggest solar-panel factory. By March, though, the Hayward-based company had run out of money, sold off its business operations and laid off more than 100 Sacramento-based construction workers. OptiSolar's production lines were bought in July by another solar firm with much more modest plans.

Sacramento's Pacific Ethanol was a biofuels pioneer, growing to become the biggest ethanol maker on the West Coast. But in May, the company put its four production plants under Chapter 11 bankruptcy protection, the result of low fuel prices and the high cost of corn, ethanol's main ingredient. The company has recently shown signs that it is reviving, though, and has reopened one of its three shuttered plants.

While clean technology is often touted as a creator of new manufacturing and other blue-collar jobs for a country that has seen that sector shrink, there's not yet much evidence of significant growth of that type in Sacramento. Solar Power, for instance, is based in Roseville but makes its panels at a factory in China. McClellan-based Renewable Energy Institute International, which recently won a \$20 million federal grant, does its research and development locally, but its biorefineries are likely to be built in Ohio.

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Experts say there's no simple strategy for developing the region's clean-tech potential, and that building a substantial economic presence in the sector will take a sustained effort from everyone from the business community to local government.

Currall, the UC Davis business school dean, said the region should start by focusing on the green-tech industry and trying bit by bit to brand itself as a hub, much as Houston did with energy.

"Let's tell the story and see if we can build a brand," Currall said. "Just start flying the flag."