



AMERICA'S ECOCITY An ambitious master plan for San Francisco's Treasure Island aims to replace the former naval base with a sustainable, transit-oriented community. Will the actual development be as "green" as the plans? By Daniel Jost, ASLA

“WITHIN A CENTURY, Treasure Island, this place we are right now, could be completely underwater,” declared Arnold Schwarzenegger in a speech last December. This small man-made island in the middle of the San Francisco Bay is often used to symbolize the perils of global warming.

So it goes without saying that any plan for new development here would have to address the possibility that glaciers will

melt and sea levels will rise. It would have to make sure new buildings are not subject to a 100-year flood, either today or 50 years from now. But a thoughtful new master plan for Treasure Island goes beyond that. It proposes a community that is a model of sustainability—of the sort of living that may actually prevent the most serious climate change scenarios from becoming a reality.

High-profile “ecocities” or “ecotopias” have been proposed in a number of foreign

countries. William McDonough + Partners’ plans for Huangbaiyu in Northern China, Arup’s plans for Dongtan Eco-City in Shanghai, and GCLA’s proposal for “Food City” in Dubai spring to mind. But there are very few proposals in the United States that look at development in such a holistic way.

Here, buildings are often certified as “sustainable” with no consideration for how they fit into the surrounding context or how that context will affect their green-



house gas emissions. Some are located on valuable farmland in a far-flung suburb that can only be reached by car. Some are technically sustainable, but their designers neglect to consider how people will feel in the spaces they create, so they could face the wrecking ball long before their materials wear out. Then, there are the hoity-toity mixed-use developments where you can comfortably walk from your home to various shops and services—but only if you can afford to live there, and most of the service sector employees who work there cannot.

Treasure Island is supposed to be differ-

ent. Its master plan is not only rooted in technical ideas about sustainability but in many of the social ideas expressed (but rarely implemented) by the New Urbanists—such as mixing people of different income levels in the same neighborhood. The development is not located on virgin land, far from the city. Instead, it repurposes an old naval base—486 acres just a stone’s throw from downtown San Francisco. It will be designed to encourage walking and mass transit. It will be powered by solar panels and windmills integrated into the architecture. It will be drained through bioswales and

stormwater wetlands. And at the center of it all, there are plans for growing vegetables.

How did the plan for Treasure Island come to be so progressive? The unusually large scale of the project and the poor state of the existing roads and buildings gave the planners a rare opportunity to completely rethink the island’s infrastructure. Also, since the land is owned by the government, planners could offer the land to developers at a price below the market rate. In exchange, the developers will agree to certain contractual obligations that will serve the public, including building parks and trans-

A plan by Skidmore Owings & Merrill, CMC Landscape Architecture, and Perkins+Will (among others) would transform Naval Station Treasure Island, right, into a walkable, transit-oriented community, here.



Treasure Island—a landmass built of sandy fill dredged from the San Francisco Bay—and the western half of Yerba Buena Island. (The two islands are connected by a narrow, constructed isthmus.) When the naval base closed in 1997, the city set up the Treasure Island Development Authority to oversee redevelopment and take responsibility for any new public lands created. Some of the old apartment units, where the servicemen and their families lived, were rented out temporarily. Others were provided to previously homeless people through a program called the Treasure Island Homeless Development Initiative.

To make sure the planning process would produce a buildable solution, the government decided to partner with a master developer from the private sector. So for the past 10 years, the city has been working closely with Treasure Island Community Development (TICD), a partnership between Lennar Homes, Kenwood Investments, and, more recently, Wilson Meany Sullivan, a San Francisco-based developer that specializes in urban infill.

portation infrastructure, applying sustainable building codes, and providing housing for people who make less than the median income.

While other, more utopian plans have surely been drawn up, the master plan for Treasure Island is significant because it is not just the fruit of one person's imagination; rather it is the product of more than 15 years of planning within both the public and private sectors. A team of architects, landscape architects, planners, and engineers has carefully studied the opportunities and constraints of the site and continues

to weigh what is and is not feasible here. A variety of voices from the community have also been heard—in fact some have called it the most publicly vetted project in San Francisco history.

But many other so-called ecocities have failed to live up to their initial promise. Additionally, the current recession has stalled many smaller, less-ambitious developments. Will Treasure Island be able to live up to all the hype?

Building Critical Mass

Naval Station Treasure Island included all of

ter developer from the private sector. So for the past 10 years, the city has been working closely with Treasure Island Community Development (TICD), a partnership between Lennar Homes, Kenwood Investments, and, more recently, Wilson Meany Sullivan, a San Francisco-based developer that specializes in urban infill.

Over the years, TICD has assembled a large team of consultants to come up with plans for reusing the site. The latest plan, which has undergone few major changes to its physical form since December 2005, grew out of collaborations between archi-

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sects from Skidmore, Owings & Merrill (SOM), landscape architects from CMG Landscape Architecture, and planners from SMWM (now Perkins+Will). Sustainability consultants from Arup and a variety of other architects and engineers have worked in specialized roles to elaborate on the plans, and, at the city's request, the plan was peer reviewed by William McDonough+Partners.

In many ways, the island is a real estate developer's dream. "We have some great assets to work with," says Keith Orlesky, design director at Wilson Meany Sullivan. "The views are among the very best views one could hope to find in the country." The site is also close to downtown San Francisco, "a place that has consistently shown, even in this [economic] downturn, that people want to live there," Orlesky explains.

Yet the site also presents many challenges. One of the most significant challenges from a development perspective is its isolation. The only way to reach Treasure Island by car is by crossing the Bay Bridge, which is heavily congested during peak hours. A lack of adjacent development is a blessing when trying to get a project through the review process, but it can be problematic when trying to make it work financially. There are no immediate neighbors to help support stores, restaurants, and public transportation—all of which require a certain amount of critical mass to make them feasible.

An early plan by some of the same consultants, released in 2002, had a New Urbanist feel with a series of attached town houses spread over much of the island. John King, the urban design critic for the *San Francisco Chronicle*, called it "quasi suburbia." Some voiced concerns that the 2,800 residential units it proposed would not be enough to create a vibrant neighborhood and that residents would have had to drive over the Bay Bridge just to go to a grocery

Responding to Rising Sea Levels

SEA-LEVEL RISE is one area where the plan will definitely have to adapt as new information becomes available. The actual amount of rise is very difficult to predict, and some scientists, including James Hansen, director of NASA's Goddard Institute for Space Studies, have said that even the existing estimates are too conservative.

While the development on Treasure Island is set to be sustainable, it is not gambling that all other development in the coming years will follow suit. Precautions are being taken in case sea levels do rise as predicted. According to a report by the engineering firm Moffat

& Nichol, the 100-year high tide for Treasure Island, the point to which waters might rise during a storm surge, is estimated to be 9.1 feet above mean sea level. The perimeter elevation of Treasure Island currently ranges from 10 to 14 feet, and parts of the island are as low as six feet.

Sea-Level Rise Predictions

Intergovernmental Panel on
Climate Change, 2007:
0.6 meters or more (around 2 feet) by 2100

State of California Climate Change
Impacts Assessment, 2009:
12-18 inches by 2050
21-55 inches by 2100

Treasure Island Community Development plans to set all buildings, streets, and parking garage entrances at 36 inches above the current 100-year high tide, and finished floor elevations would be six inches higher. The perimeter improvements and the stormwater plan they've proposed would accommodate a 16-inch sea-level rise without any alterations.

Pumps would be required during high tide if sea levels rose any higher. To avoid costly renovations, the pipes needed for this system will be installed as part of the initial development.

If sea levels rise more than 36 inches, a variety of different strategies could be undertaken to adapt to this change. The parks surrounding the island are quite wide, and small levees or berms could easily be added within most of these areas to protect the development. Seawalls could be used where there is less space. Kevin Conger, ASLA, of CMG Landscape Architecture says sections of the park could even be influenced by the tide in the future, creating new tidal wetlands or beaches.



A waterfront park facing San Francisco would have an average width of 350 feet, providing room to develop levees if sea levels rise.

CMG Is Pushing Sustainability

KEVIN CONGER, ASLA; Willet Moss, Affiliate ASLA; and Chris Guillard, ASLA, founded CMG Landscape Architecture in San Francisco in 2000.

Lately, the firm's knack for eye-catching, sustainable design has been turning heads.

CMG recently netted two honor awards from ASLA (see "2009 ASLA Awards," *Landscape Architecture*, August 2009). Its award-winning design for the Crack Garden used jackhammers to transform an old concrete pad into a welcoming garden with stripes of herbaceous vegetation. The project stood out as a low-budget solution for recycling a concrete pad while increasing its permeability.

CMG's design for the Panhandle Bandshell was also unique. The band shell was created as an "open source" public stage where anyone could put on a performance. The temporary structure was made using a variety of recycled materials. The roof of the band shell was a patchwork of car hoods of various colors. The back wall was built using 3,000 plastic bottles, and old circuit boards were used to accent the interior.

CMG's work on Treasure Island has allowed the firm to apply its ideas about sustainability on a much larger scale. Landing a position on the planning team was a major victory for the young firm. However, Conger, who leads the project within the firm, was no stranger to large-scale land planning: As a landscape architect at Hargreaves Associates, he traveled to Sydney to help craft the master plan for the 2000 Summer Olympics.

Keith Orlesky of Wilson Meany Sullivan says Conger has encouraged the team to think about larger systems. He has been an important advocate for developing the plans in a way that is in harmony with the surrounding environment, for creating plans that are truly sustainable and not just greenwashing. "He's been a steward of the principles," says Orlesky. "It's very easy to lose sight of some of these things. Kevin is very articulate [in explaining] those principles and why we need to pay attention to them. He draws compelling pictures of what might be and gets everybody inspired."

store.

Among San Franciscans attending public meetings, there was strong support for a sustainable, transit-oriented development that was not just a bedroom community for San Francisco and Oakland. And they were willing to accept more density to achieve this. "The public was pretty supportive of the idea of getting some tall buildings in there, which we were surprised by," says Kevin Conger, ASLA, a founding partner at CMG.

SOM, which has a strong track record for high-rise design, was added to the planning team in 2005. In the latest plans, the development has a much smaller footprint, but the number of residential units has nearly tripled. At build out, the new development is expected to house around 15,000 people on 90 acres of land. Treasure Island will have shops, restaurants, hotels, a school, a police and fire station, and a variety of residential options. A number of towers, including an iconic skyscraper 60 stories tall, are planned for the site. The towers are not set in their own individual "parks," like a midcentury housing project; rather they relate to the street and create space. The entire development is surrounded by parks, recalling the clear city-country divide of an Italian village. In all, the plan will create 300 acres of new parkland, an area one-third the size of Golden Gate Park.

"Three hundred acres is a lot of open space for 15,000 people," notes Conger.

"There are not enough people to really activate and become stewards of that much open space." So the parkland is being planned as a regional, possibly national, attraction. It will have a variety of distinct experiences—a sculpture garden, wetlands, baseball and soccer fields, and a 20-acre organic farm.

Working with an Artificial Island

The island's isolation wasn't the only challenge. The fact that it isn't a natural landform has presented a number of challenges as well. One of the development team's earliest obstacles was California's Tidelands Trust Act, which prohibits most types of new development on tidal lands filled after 1900. Under this law, private development on Treasure Island, which was created in the late 1930s, would have been prohibited. The purpose of the law is to prevent developers from filling coastal wetlands, which serve as important breeding grounds for fish and birds. But Treasure Island hasn't been a pristine natural habitat for nearly seven decades, so the city and the development team worked with the state legislature to pass a special law allowing them to develop 90 acres on Treasure Island in exchange for preserving 90 acres of land on

An early plan, completed in 2002, was more spread out and had a much lower density. It drew criticism for being "quasi-suburban," and some worried it could not support a grocery store or other neighborhood retail. The latest plans would concentrate development near a new ferry terminal and include a number of tall and mid-rise towers, page one.



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Yerba Buena Island (a natural island) and improving its value to wildlife. Willet Moss, Affiliate ASLA, another partner at CMG, is leading a team of biologists on the habitat management plan for Yerba Buena Island.

Treasure Island also presented engineering challenges. The fill is sandy and in some places very deep, so there were concerns about liquefaction during an earthquake. An earthquake can cause poorly packed sand with a high water content to act like a liquid and lose its ability to support buildings. Many San Franciscans still remember the 1989 earthquake, when liquefaction caused major damage to San Francisco's Marina District, so there has been a great deal of public attention focused on this issue.

Steps will have to be taken to secure the island before any new development can begin. Engineers at Treadwall & Rollo

came up with recommendations for strengthening the island's edge. Extra attention will be given to compacting the land that the roads and structures sit on.

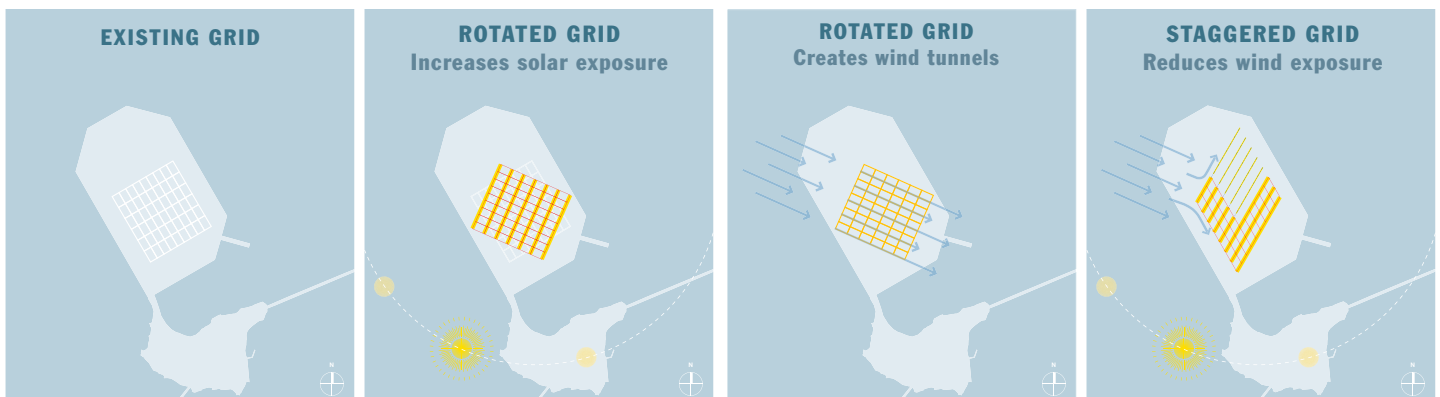
The island's geotechnical issues have also played into the debate over the density of the development and where on the island it would be located. The natural substrata favored developing taller buildings closer to Yerba Buena Island, where the native bedrock is closer to the surface, says Craig Hartman, an architect at SOM.

Working with the Local Climate

A 36-acre Jobs Corps campus near the center of the island was off-limits to the planners and will remain unchanged. However, very little of what exists on the island today will be retained—not even the streets. Most of the asphalt will be ground up, recycled, and relocated.

Perhaps most notable in the master plan is the street grid. The unusual diagonal arrangement responds to the strong winds that blow over the island, bringing large banks of fog during the summer months. "To make it habitable and comfortable, we needed to find a way to minimize the wind in public spaces and maximize the level of daylight," Hartman explains.

"In America, our cities are almost all based on the Cartesian grid, and that's not necessarily the best way to respond to climate," says Hartman. The planning team used data from the navy's wind-monitoring stations to determine the direction of the prevalent winds and designed the secondary streets so that buildings would block the wind—so the streets wouldn't become wind tunnels. Hartman drew inspiration from small towns he visited around Lake Como in Italy that are similarly adapted to the wind.



COURTESY TREASURE ISLAND COMMUNITY DEVELOPMENT, BOTH; TOP RENDERING BY D-BOX; BOTTOM DIAGRAM BY SOM



Windrows, the lines of trees and shrubs that farmers use to protect their crops, were also an inspiration. This idea is reflected quite literally where the diagonal streets meet the park and the allée of street trees continues into the open space. Buildings are also used as “windrows” within the neighborhoods themselves. The team has proposed mid-sized residential towers placed where they could shelter small public squares. To encourage sunshine within these squares (and passive solar heating of the towers), lower buildings are placed along the square’s southern edges. But the design is not only

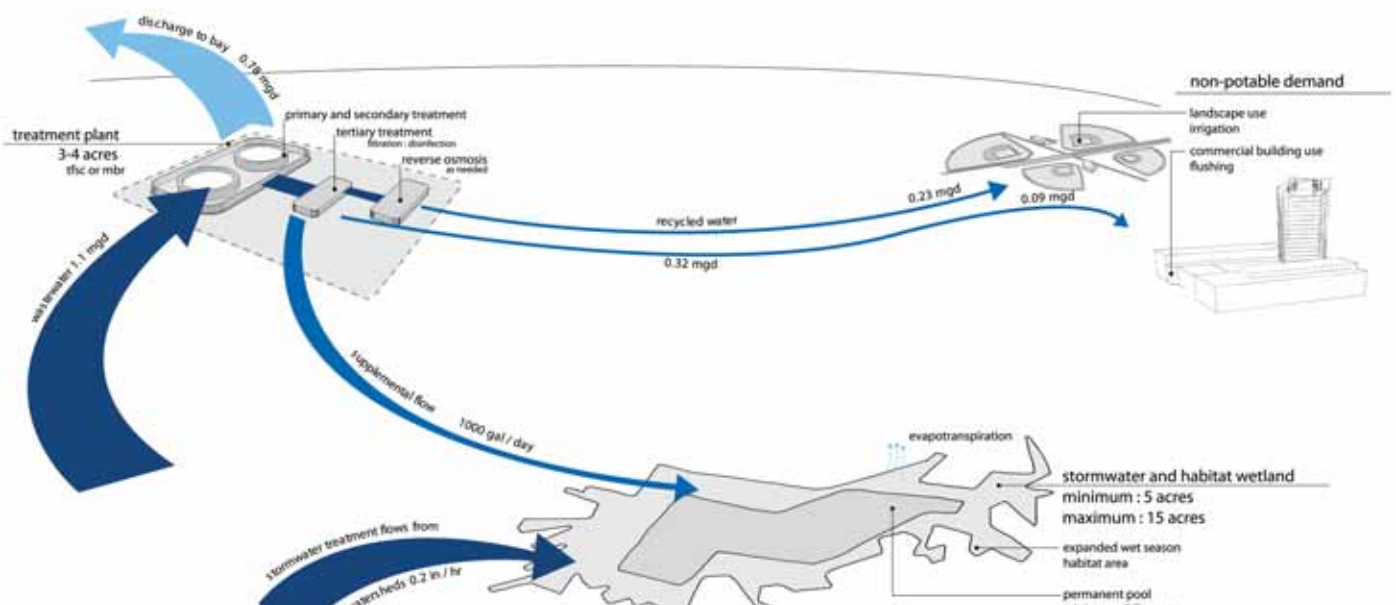
about blocking the wind. In certain places, it’s about celebrating the wind. “The northern shoreline, with its large landforms, will allow you to be up in the wind, to experience it,” says Conger.

To design the site, the team constructed a digital model to analyze sun and wind patterns, and they plan to test the design by placing a physical model in a wind tunnel.

The development will be surrounded by a 300-acre park, top. The diagram below is one of the concepts under consideration for how water will be recycled. A wetland will treat much of the stormwater that falls on the island and provide habitat for migratory birds.

A Sustainable Community

“Prioritizing pedestrians, bicycles, and mass transit over auto use is a key principle that’s come out of the public planning process,” says Michael Tymoff with San Francisco’s mayor’s office. To accomplish this, the plans locate 90 percent of the residential units within a 15-minute walk of a new ferry terminal. The tallest towers will be only five to 10 minutes away. Originally, plans called for locating the ferry terminal at an old pier on the east side of the island; however, the latest plan calls for a new, \$20 million terminal on the island’s southwest corner, which will provide a more intuitive link to



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San Francisco, shorten the ferry ride, and integrate a historic airport terminal into the arrival experience.

The terminal will be transformed into a retail corridor along with two old airplane hangars nearby. Near the terminal, there are plans for an outdoor marketplace with an overhead structure covered with translucent, photovoltaic panels. Planners are hoping this area will draw tourists and residents from Oakland and San Francisco, that people will catch the ferry from downtown, eat dinner on Treasure Island, and take a stroll in the park as the sun sets behind the San Francisco skyline.

Though the plan does not eliminate automobile use entirely like some ecocities, many of the roadways on the site will be designed primarily for pedestrians, with low speed limits and no garage or driveway access (see “Sharing the Road with Pedestrians,” right). The project team is studying various policy ideas, such as a congestion tax, which would charge cars to enter and exit the island during peak times. And to help make transit more viable, they are considering a mandatory ferry user fee that would apply to everyone living on the island rather than charging residents for their individual trips.

The project plans to use clean forms of energy. Planners say 60 to 70 percent of the buildings’ roofs will be designed to accommodate solar panels, and the south sides of new towers will be covered in transparent, photovoltaic skins.

Wind power is also being considered. Though large wind turbines would seem like a viable option, given the island’s windy nature, it is located on a major bird flyway. So, smaller vertical axis turbines may be an appropriate alternative, according to Jean Rogers, a sustainability con-



Sharing the Road with Pedestrians

TO ENCOURAGE WALKING AND MASS TRANSIT, CMG Landscape Architecture has put a lot of thought into how pedestrians will feel on Treasure Island. Pedestrians exploring the neighborhood or coming home from the ferry will probably walk along the water or stroll down one of the new shared public ways. What’s a shared public way?

“It’s a lot like a *woonerf*,” says CMG founding partner Kevin Conger. “It’s a curbsless street where cars will yield to pedestrians.” *Woonerf* is a Dutch term describing a street where cars are allowed but pedestrians and cyclists have priority. They are usually narrow, winding roads with textured pavements meant to discourage people from building speed. On Treasure Island, the speed limit on these streets will be 10 to 15 miles per hour. There are no garages or driveways facing the street, but residents will have the ability to pull up to their front door and park temporarily to drop off groceries or pick up an elderly person.

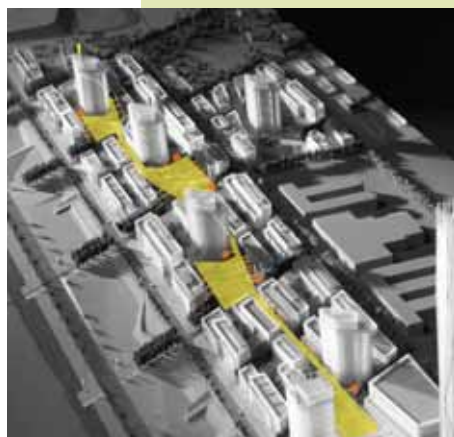
When the team began planning the streets, this wasn’t an “allowable” public street type in San Francisco. However, the planners did not want these streets to become private property. The city had been discussing a similar street type for some of its alleyways, and with the political momentum behind the Treasure Island project, it was able to create a new standard.

“I think the biggest issue will be to work with the mayor’s Office of Disability to make sure it will be safe for people who are disabled,” says Conger. “The challenge is if a person has a visual disability, how do they know if a car is coming and whether they are in the middle travel lane? With hybrids, maybe they can’t even hear them. So, we are proposing an area on the side of the road with visual contrast and tactile differentiation so you know when you’re over to the side.” In CMG’s renderings of the shared public ways, there is not necessarily a material differentiation between pedestrian and nonpedestrian areas—it’s not just a sidewalk at grade—rather there is a subtle band of textured paving, plantings, or a seat wall that marks an area that is exclusive to pedestrians.

American designers tend to be skittish about mixing different modes of transportation, but

Conger notes that there are a lot of spaces where pedestrians and vehicles mix without any problem, like a parking lot or the many suburban neighborhoods where kids take over the street to play roller hockey.

The landscape architects worked with the city of San Francisco to create a new type of road that’s curbsless, where cars will yield to bicyclists and pedestrians, *top and left*. More open space than street, these “shared public ways” are similar to *woonerfs*, which have become popular in the Netherlands.



sultant with Arup.

There is a strict sustainable building code, developed specifically for the site. Stormwater will be managed sustainably through a series of bioswales and constructed wetlands. A small sewage treatment facility will provide graywater to irrigate the farm, and food scraps and grass clippings will be composted on site for use as fertilizer for the farm.

One of the most interesting things about Treasure Island is how much effort has gone into analyzing the development's environmental footprint. Often, designers say their work will reduce greenhouse gas emissions or increase permeability, but rarely do they quantify how much. Currently, 64 percent of the surfaces on the island are impermeable. That will shrink to 39 percent under the new plan. Sustainability consultants at Arup have estimated that the use of clean

technologies, the drop in energy demand and auto use, and the natural sequestration in newly planted areas as specified in the master development agreement will reduce per capita carbon emissions from 7,740 to 3,030 pounds per person per year. Partnerships with third parties could lower those emissions even further by producing a significant amount of renewable energy on site.

The language of the plan is meant to keep this project at the forefront of sustainability as the site is developed. "We want to allow this island to evolve over the next 25 years and harvest new technologies as they evolve," says Hartman.

The long-term goal is to be carbon neutral. Last year, Treasure Island was selected as a founding project of the Climate Positive Development Program, a partnership between the Clinton Climate Initiative and

the U.S. Green Building Council that is advocating for carbon neutral development to prevent climate change.

Will It Live Up to the Hype?

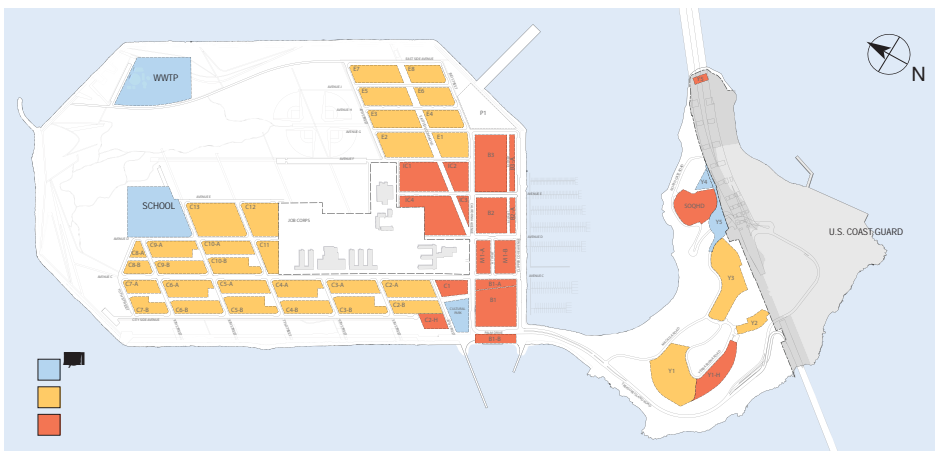
Plans for Huangbaiyu and Dongtan Eco-City received a great deal of positive press when they were first introduced. But as Christina Larson noted last year in *Yale Environment 360*, neither of these plans has lived up to expectations so far. Will the plans for Treasure Island meet a similar fate?

In her article, Larson suggests that part of the reason many of the key sustainable ideas at Huangbaiyu were missing from the final project was the lack of buy in within the local community—that the plan was shaped by outside experts and never really embraced by local politicians or citizens. After countless public meetings involving many stakeholders, this shouldn't be a problem in San Francisco.

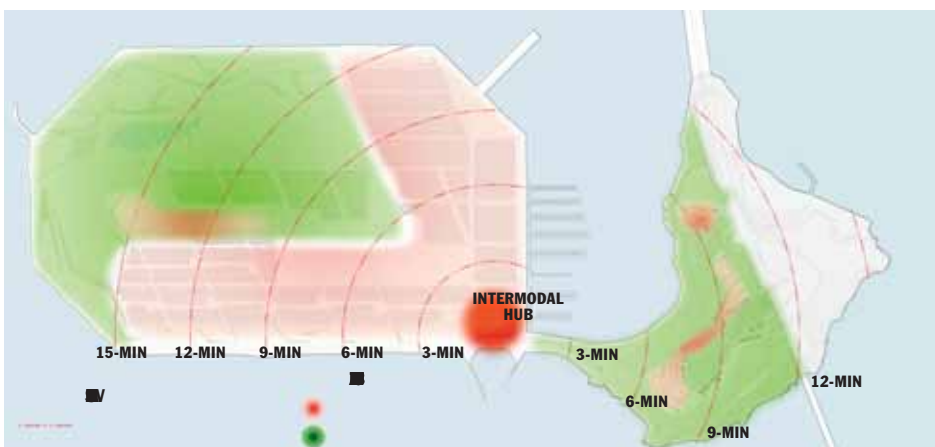
But will the cost of making the project sustainable be too overwhelming? "There's a perception that sustainability is expensive," says Arup's Rogers, "that everyone starts with good intentions and things get value engineered out." But she says that is becoming less of an issue.

"We've seen alternative financing mechanisms that make these things possible," Rogers says, such as the Energy Service Company model, under which a third party will finance photovoltaics or energy-saving upgrades that require a major capital investment up front, then the building owner or its occupants pay over time as energy is produced or cost savings are realized. Rogers says all the major photovoltaic producers now offer this sort of financing model and many of the bankers laid off during the recession have been starting companies within this niche. This helps resolve a much-talked-about problem—that developers are often unwilling or unable to pay large costs up front, even when this initial down payment will save money over the project's life cycle.

"There are third parties not just for energy, but for water [treatment], for solid



At build out, Treasure Island will have shops, restaurants, a school, a police and fire station, and a variety of residential options, above. Thirty percent of the residential units will be available to people who make less than the median income and 90 percent of the units will be within walking distance of an intermodal transit hub with ferry and bus service, below.



COURTESY TREASURE ISLAND COMMUNITY DEVELOPMENT, BOTH; TOP PLAN BY CMG LANDSCAPE ARCHITECTURE; BOTTOM PLAN BY SOM



The Clinton Climate Initiative has named Treasure Island, seen in the distance *here*, a founding project in its Climate Positive Development Program.

COURTESY TREASURE ISLAND COMMUNITY DEVELOPMENT. RENDERING BY D-BOX

waste—all of which we are exploring,” says Rogers. To manage their waste, they are in talks with a company called Trans Vac Systems to build and operate an automated vacuum collection system—a series of pipes with vacuum pressure that would carry trash and recyclables to a central facility. This system could make composting and recycling much more convenient. Whether or not it will offer a net environmental benefit is unclear, but it would definitely add a wow factor to the project. It also has the potential to improve the local ambience and air quality. “It gets all the diesel collection trucks off the streets,” says Rogers. “It gets the trash off the streets.” Rogers notes that the technology has been used successfully in a number of European cities, but in America it has been limited mainly to hospitals (for medical waste) and hotels (for linens), partially because retrofitting the system within an existing neighborhood would be expensive.

“I think what’s unique to Treasure Island is this [sustainability] plan is not just a plan,” says Rogers. “It’s actually ‘exhibit K,’ part of a legally binding commitment to achieve sustainability, which there are legal and fi-

“This [sustainability] plan is not just a plan; it’s actually part of a legally binding commitment to achieve sustainability.”

nancial penalties for not achieving.”

As part of the agreement, TICD is legally required to build stormwater wetlands that will handle the island’s stormwater flows. It is required to construct a central recycling and composting facility that will handle food waste. It is required to provide 5 percent of the island’s electricity using clean energy (third parties are expected to increase that percentage dramatically) and provide \$1.8 million for wind turbines. TICD is required to meet the new green building code and participate in the LEED Neighborhood Development Program—using “good faith efforts” to achieve a platinum rating.

The developer is also required to provide affordable housing on site, which will allow many service sector workers to live closer to

home. Approximately 1,800 units, 30 percent of all residential units built on the island, will be new, affordable housing. Fifteen percent of all housing will be “inclusionary units,” which means they will be integrated into the same buildings as the market-rate units. And 435 units will serve formerly homeless people through the Treasure Island Homeless Development Initiative.

“I’ve worked on a lot of projects and I haven’t seen that level of detail—where sustainability has been so embedded into the governing mechanisms of the build out,” says Rogers.

The development authority and TICD agreed on the terms in February 2007. Last December, the project passed another major hurdle when the navy and the city announced an agreement to turn over the land to the local development authority. The environmental impact report will be released soon, and if all goes well, TICD hopes to begin infrastructure work in 2011.

There are still obstacles to overcome. It is estimated that TICD will have to invest around \$1.2 billion for infrastructure before any new units are built. There are still ques-

Sustainability consultants at Arup have estimated that the development will reduce per capita carbon emissions from 7,740 to 3,030 pounds per person per year. The long-term goal is to be carbon neutral.

tions about phasing—what the exact mix of uses will be and how much can be developed at once. Wilson Meany Sullivan’s Orlesky notes that individual development projects have gotten smaller in the past few years, as the country has dealt with the recession, and if the market doesn’t fully recover, some of the towers may have to be smaller than originally imagined.

Also, the current development agreement would provide only the most basic infrastructure within the parks. To achieve the level of park amenities proposed by CMG, alternative funding will have to be found—probably through a philanthropic campaign managed by a conservancy.

But TICD, which has spent a lot of time and money on planning, is intent on making this work. “The last thing I want to win is a design award for a bunch of plans,” says Orlesky. “I want to win a design award for a built place.”

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Resources

■ “China’s Grand Plans for Eco-Cities Now Lie Abandoned,” by Christina Larson; *Yale*

Environment 360, April 6, 2009. Available at www.e360.yale.edu/content/feature.msp?id=2138.

■ Master Development Submittals for Treasure Island, www.sftreasureisland.org/index.aspx?page=26.

For more on sea level rise and how it might affect Treasure Island:

■ The Intergovernmental Panel on Climate Change Fourth Assessment Report: Climate Change 2007, www.ipcc.ch/publications_and_data/ar4/syr/en/contents.html.

■ “Power Failure,” by James Hansen; *Newsweek*, December 4, 2009. Available at www.newsweek.com/id/225529/page/2.

■ San Francisco Bay Conservation and Development Commission (Pre-Application Review), www.bcdc.ca.gov/meetings/drb/2010/02-08_Treasure_YB_islands.pdf.

PROJECT CREDITS **Master developer:** Treasure Island Community Development LLC (Lennar Homes, Wilson Meany Sullivan, Kenwood Investments), San Francisco. **Public oversight:** Treasure Island Development Authority and the Mayor’s Office of Eco-

conomic and Workforce Development, City of San Francisco. **Urban design/land planning:** Skidmore Owings & Merrill, San Francisco; Perkins+Will (formerly SMWM), San Francisco; CMG Landscape Architecture, San Francisco. **Sustainability consultant:** Arup, San Francisco. **Transportation consultant:** AECOM (formerly DMJM Harris), San Francisco. **Marine engineers:** Moffat & Nichol, Oakland, California. **Retail architecture:** BCV Architects, San Francisco. **Mid-rise residential architecture:** Mithun, Seattle. **Historic rehabilitation consultant:** Page & Turnbull, San Francisco. **Hotel and hospitality architecture:** Hornberger and Worstel, San Francisco. **Civil engineer:** BKF Engineers, Redwood City, California. **Environmental engineer:** CH2M Hill, San Francisco. **Environmental engineer/wastewater systems:** Brown & Caldwell, Walnut Creek, California. **Geotechnical engineer:** Engeo Inc., San Francisco; Treadwell & Rollo Inc., San Francisco. **Hydrology:** Phillip Williams Associates, San Francisco. **Legal counsel:** Gibson, Dunn & Crutcher, San Francisco. **Environmental impact report:** Turnstone Environmental Consultants, Portland, Oregon. **Environmental impact report and habitat restoration:** ESA, San Francisco. **Habitat restoration:** Mike Wood, biologist, San Francisco.