

New Urbanism

Principles & Practices

Sustainable Aspects

Applicability to China?

Presentation prepared
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I'm going to talk about New Urbanism, a movement started by a group of concerned designers in the early 1990's as a response to what they viewed as the "disinvestment in central cities, the spread of placeless sprawl, increasing separation by race and income, environmental deterioration, loss of agricultural lands and wilderness, and the erosion of society's built heritage." (charter of the new urbanism) As a design approach, New Urbanism is now fervently embraced by planners and developers across the country. However, there is an evident rift between the principles set forth by the charter and the implementation of "new urbanist" communities. First I will give a brief background on the principles and then compare them to the practices. Then I will discuss the sustainable aspects of New Urbanism. Finally I will end with a discussion of New Urbanism's applicability to China.

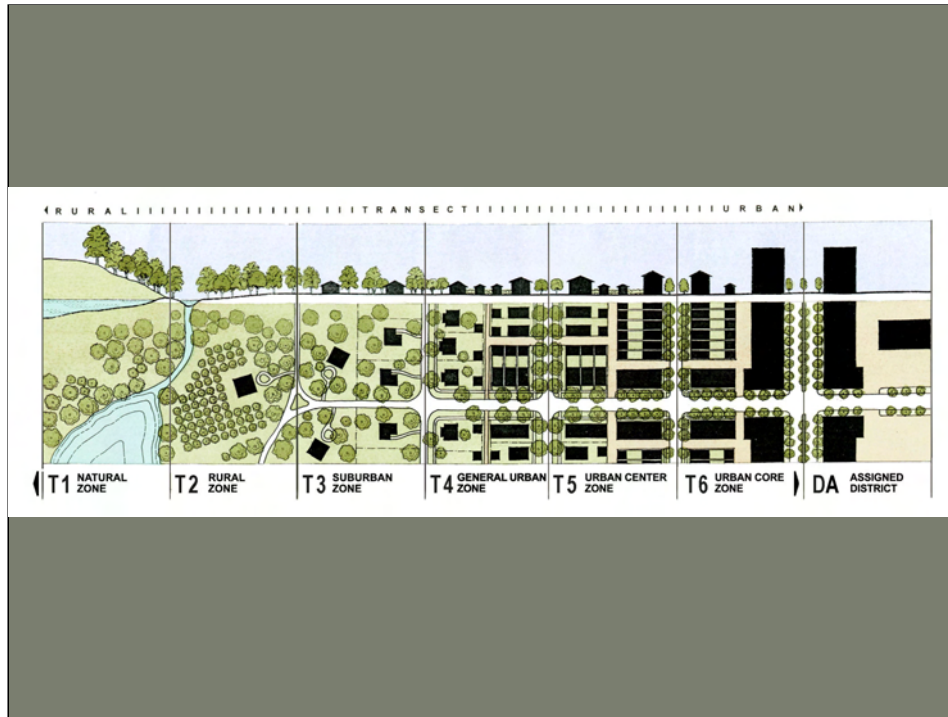
Principles

The Region: Metropolis, City and Town

The Neighborhood, District and Corridor

The Block, Street and Building

There are three main categories of principles. Within these categories are 27 specific principles that describe the characteristics of the New Urbanist philosophy.



This is the new urbanist's ideal transect, an historic conception of development, from wilderness nature on the left to dense urban development on the right.



To illustrate the principles and practices of New Urbanism, I'll use an example from the Bay Area. The principles included under the Region category first define what is a Metropolitan Region. For example, the San Francisco Bay Area is a metropolitan region, which is made up of a 9 county area. The principles go on to explain that this metropolitan area is “a fundamental economic unit of the contemporary world,” which San Francisco clearly is, being a financial center for the west coast. Other elements of the New Urbanist metropolis fall under the concept of smart growth, which are: maintaining a transect of development through the promotion of non-fragmented growth, practicing economic sustainability and integrated regional planning.



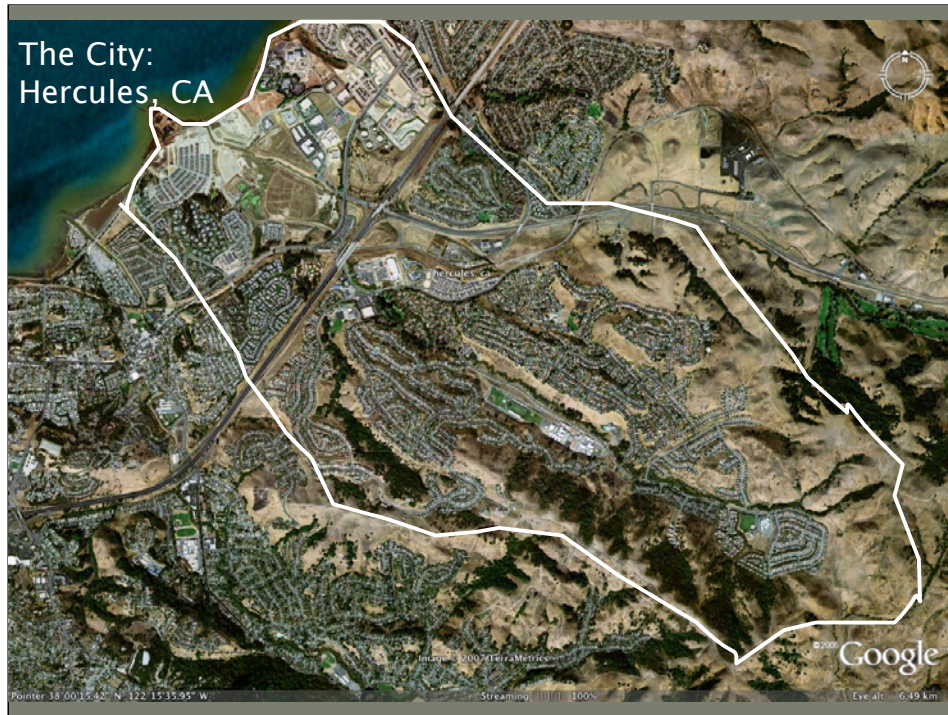
ABAG is an example of a regional organization that works to integrate planning and development in the San Francisco Bay Area.



The city that I am focusing on is in the geographical region of San Pablo Bay.

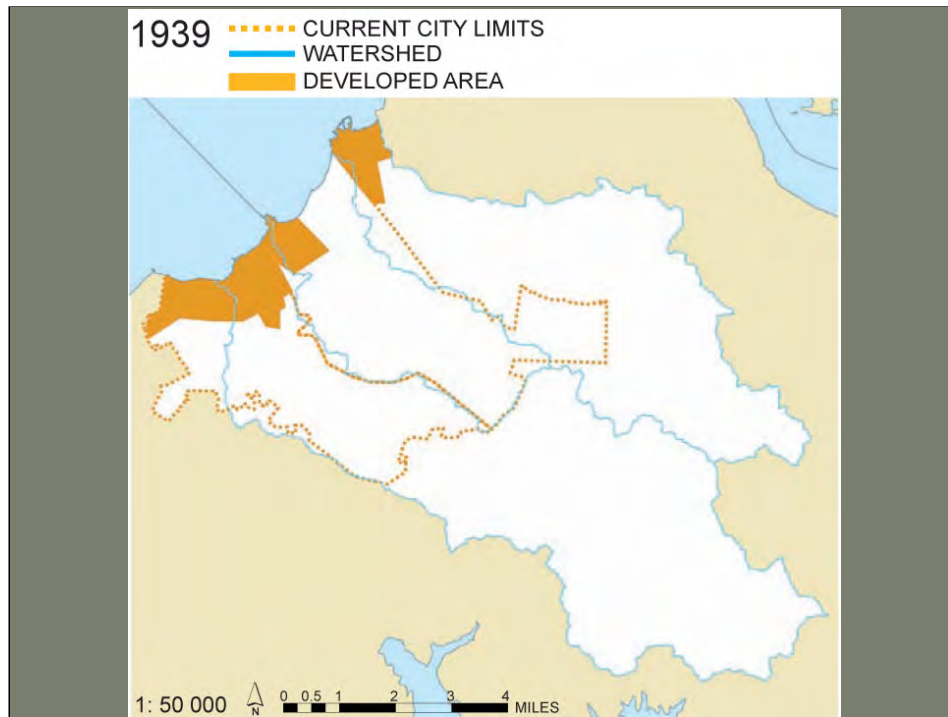


The city is called Hercules.



Hercules, is located in Contra Costa County. It is primarily located within the Refugio watershed. (white outline)

The city was originally founded as a company town for the California Powder Works and manufactured dynamite, which is why the town was named after the mythical hero of strength. In the 1970's the company closed the business and sold the land to a developer.

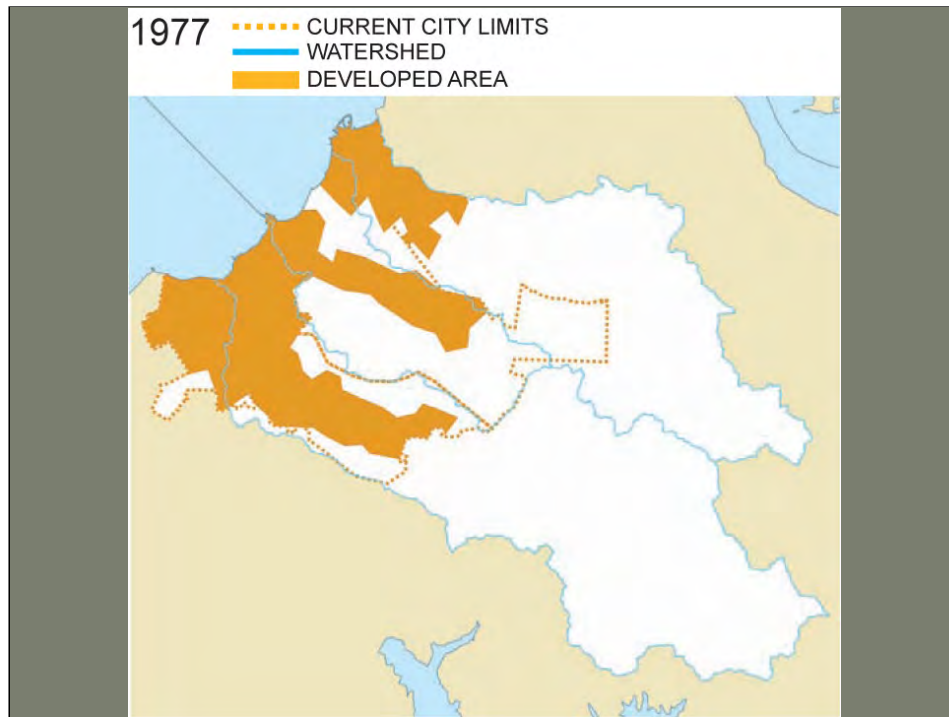


As you can see from this series of slides, the development grew outward, eventually reaching the growth boundary (orange dashed line) that was established in the year 2000 by Contra Costa County. Refugio watershed is the small outline in the middle of the other two blue outlined watersheds.

1950

- CURRENT CITY LIMITS
- WATERSHED
- DEVELOPED AREA





Notice the development outwards in the Refugio watershed. This was the first wave of development that occurred after the company town was sold to a developer.

2004

- CURRENT CITY LIMITS
- WATERSHED
- DEVELOPED AREA



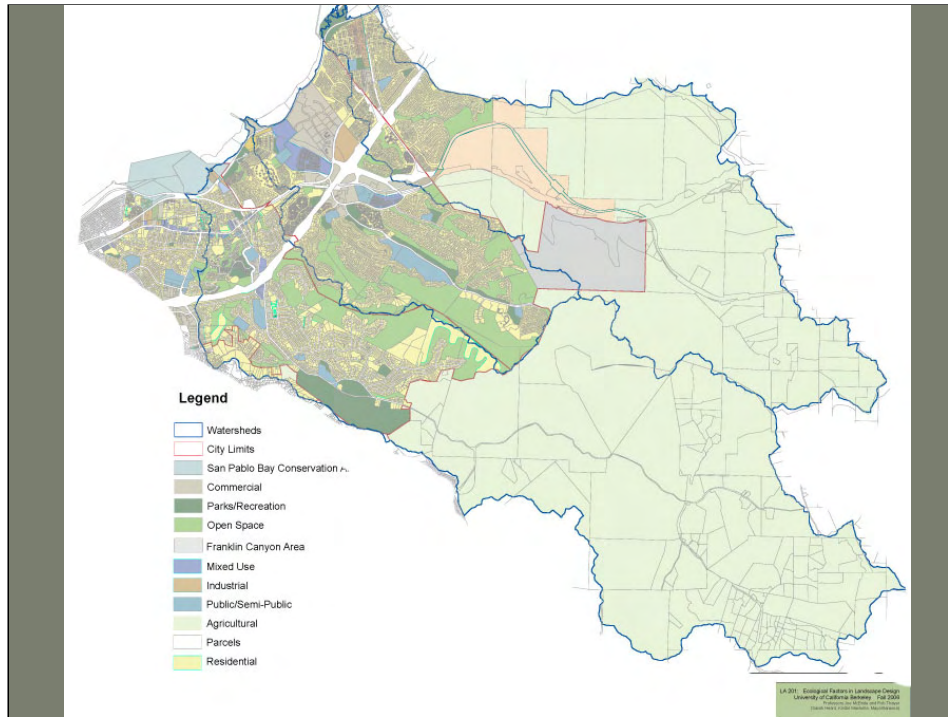


Neighborhoods, Districts and Corridors: Back to the principles...

A city is composed of neighborhoods, districts and corridors. The neighborhood that I'll talk to you about is situated on the former powder factory site. The district is located on the other side of the interstate and is the primary commercial location for the community.

A variety of corridors have intersected Hercules over time: First, San Pablo Avenue, then the Railroad, next a state route, and finally the interstate.

The key concepts at this scale are walk-ability, integrated planning, transit-oriented development, mixed-use development with the use of form-based codes and a distribution of a variety of open spaces.



In this land use plan, you can see the reinforcement of the county’s growth boundary, you can identify the key districts and corridors as well as the neighborhoods. There’s also a well-connected network of green spaces. To this extent, Hercules is aligned with the concepts of new urbanism.

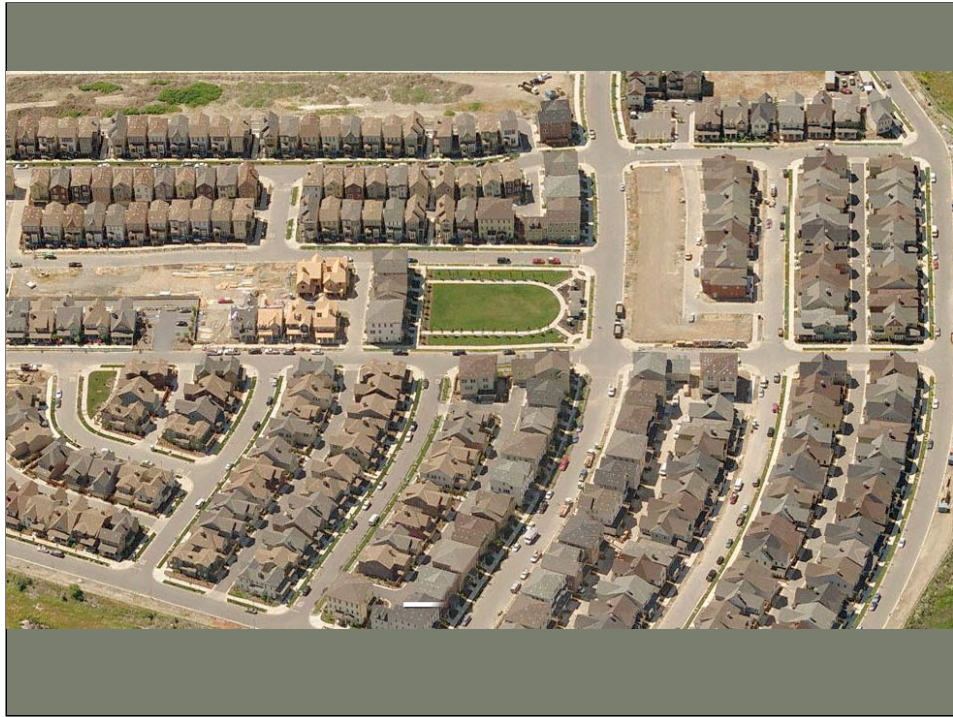


The block, the street and the building:

The charter describes these three aspects of a community through the following concepts:

Create well-defined public spaces, design in a context-sensitive manner, balance notions of safety and accessibility, design streets for multiple modes of transit, celebrate civic buildings through architectural expression, and practice preservation and restoration.

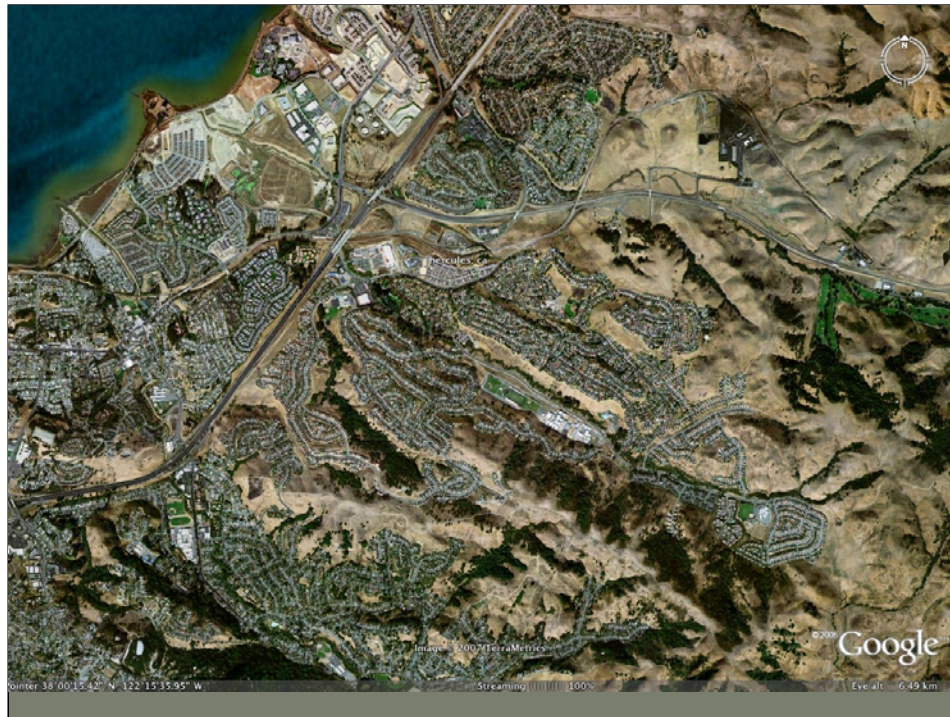
The city decided to redevelop the powder works site using the principles of new urbanism to guide its design. In this image, you can see several historic buildings, which the city uses for community facilities. In the upper right-hand corner is the Bay. The city will keep the majority of the open space in this image as public open space, which ties into the larger Bay Trail System. The style of the houses and row of mixed use buildings recall an historic era, blending in with the existing structures. There are both streets and alleys allowing for cars to park in garages in the back of the lots. This addresses the issue of safety and accessibility by allowing for a maximum frontage of the house to have “eyes on the street” while providing a secure area for the car and other storage. Notice also there are sidewalks on all streets, promoting walkability. Notice there is a mid-block street which leads to the mixed use area. The alleys also provide another level of access in that each house has both a formal front entrance and an informal back entrance, providing multiple opportunities for neighborly interaction.



Here is another example of a well-defined public space.



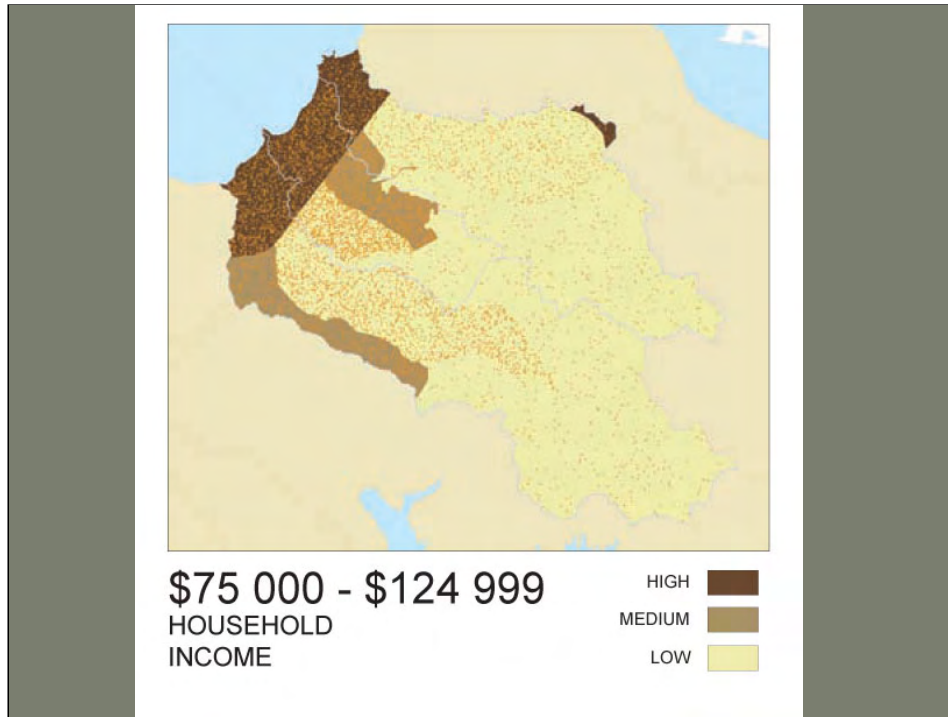
This image shows that there is connectivity between the neighborhoods. New Urbanist neighborhoods are intended to be a walkable unit so the number of housing units is typically limited to three or four hundred. The city of Hercules used the principles of new urbanism to select developers for this area, so there are a series of neighborhoods that are similar in conceptual layout, but vary slightly in aesthetic presentation. The green space in the middle of the image is a creek restoration project, which also serves as an edge-defining open space between two neighborhoods. The green planting strips along the sidewalks help manage storm water runoff.



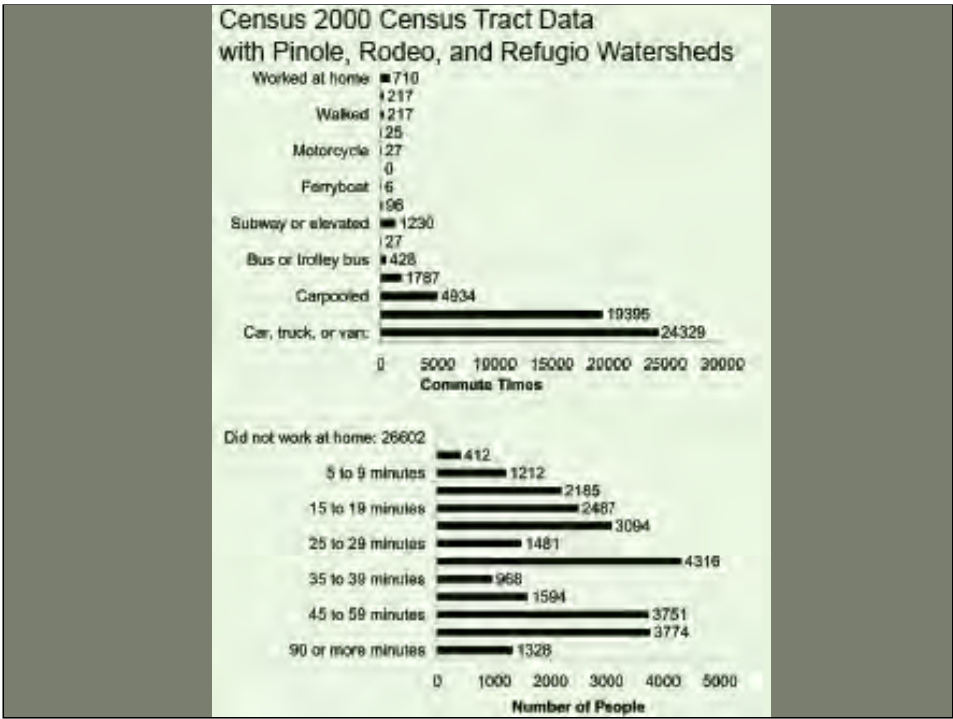
Now, the problems with Hercules and why it fails as a New Urbanist community:

Everyone drives. Quoting wikipedia: It is one of many small “bedroom communities” along the I-80 corridor in Western Contra Costa County. It is located about 20 miles northeast of San Francisco, and approximately a half-hour drive **(WITHOUT TRAFFIC)** from either Oakland or San Francisco.

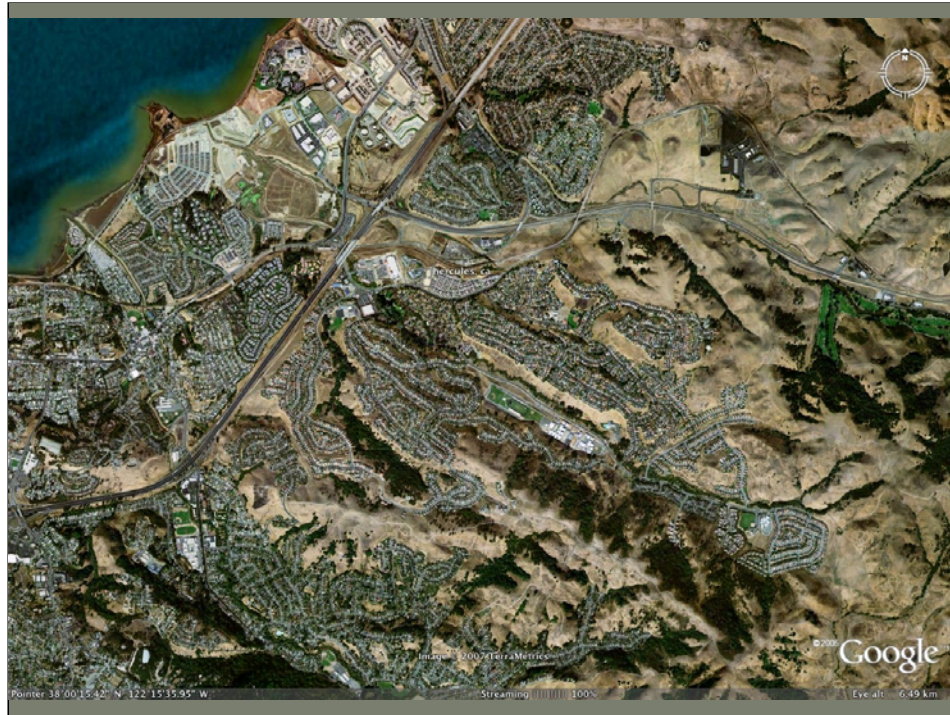
The population generally ranges between middle class to affluent and is racially diverse, Asian Americans being the largest group.



As you can see, the highest intensity of this upper middle-class income range correlates with the new urbanist neighborhoods, which creates a homogenous population. Creating a diversity of housing opportunities is one of the main tenets of new urbanism that fails most often in practice.

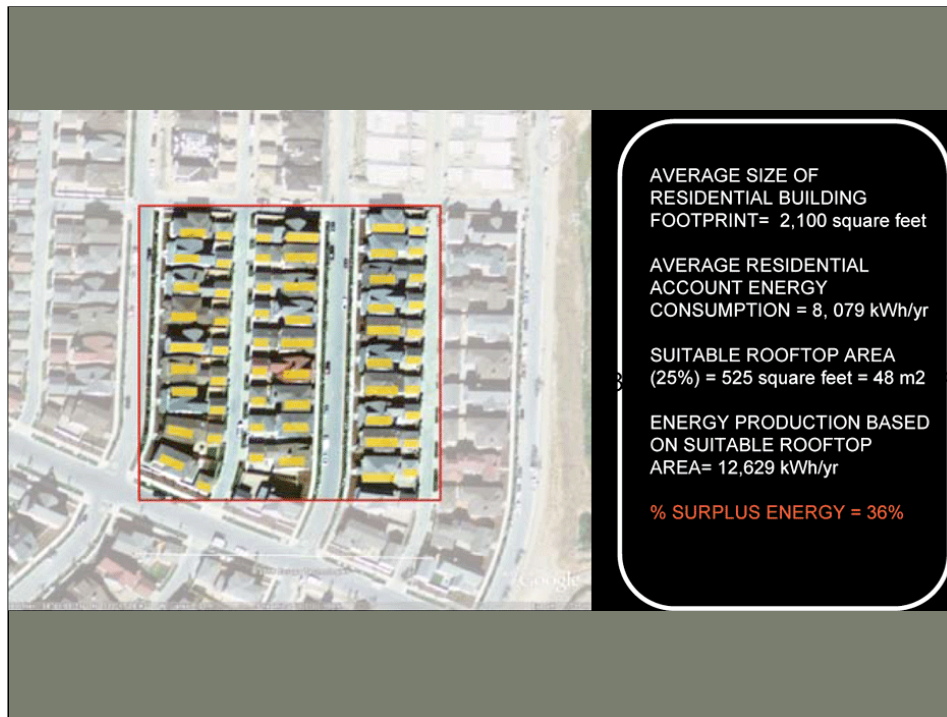


Most people in these bedroom communities drive 25 minutes or more to commute to work everyday.



The fact that the commercial district is located on the other side of the interstate from these neighborhoods further promotes driving. All of the schools and major recreational facilities are also too far away to walk. While all of the notions of walk-ability are present within the built form of the neighborhood, there is nowhere to walk to, which is another major failing of the practice of new urbanism.

Sustainable Aspects
of New Urbanism



In addition to the human health aspects of new urbanism that play a role in creating a sustainable community, such as promoting walkability, there are several other areas where new urbanism emanates best management practices: Increased density optimizes the use of land; encouraging reuse of sites and infill decreases the impact of greenfield development; and integrated storm water management reduces impacts on natural systems. These three elements allow for an increase in space for habitat restoration through a well-connected open space plan.

In Hercules, they own their own municipal electric utility. This provides electricity at a lower rate than the private company PG&E and returns the revenues to the local coffers enabling profits to be reinvested in the city. (This has major implications with regards to Prop 13 because the city can use the municipal utility as a source for revenue generation, giving them more negotiating power with big-box commercial retail because they are less reliant on these corporations for revenue generation through sales tax.)

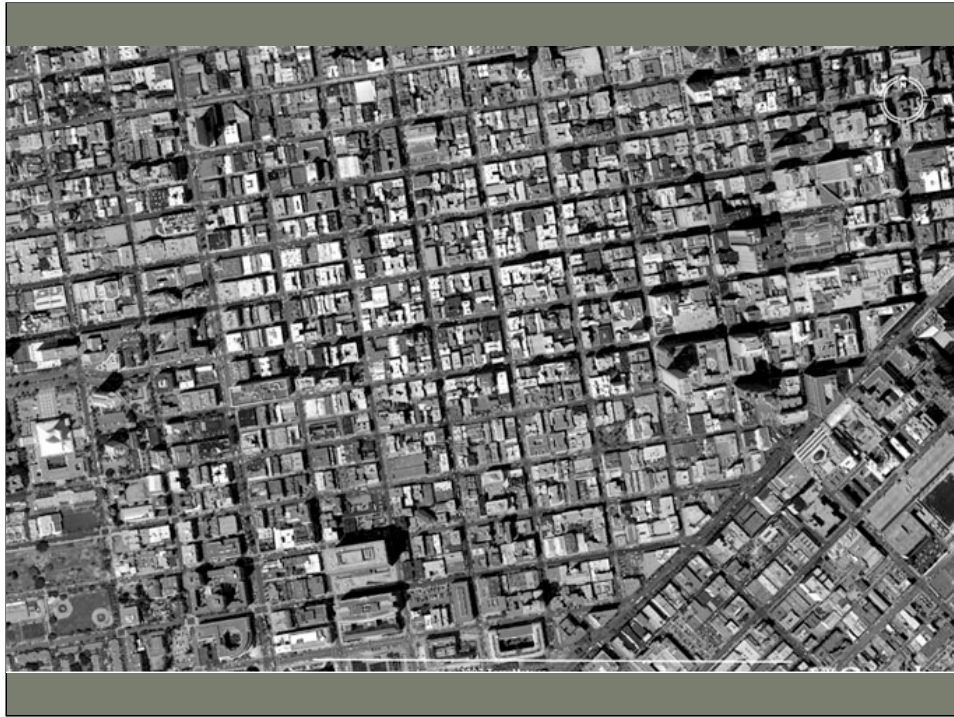
We looked at Hercules to see how much energy it could produce using solar PV with the idea that the municipal utility could sell back the additional power to the grid, generating additional income for the city.

The density of the housing, consistent with new urbanism, generates a low urban forest canopy, primarily focused on open spaces and streetscapes which generates a significant solar access area for the housing. Also, the consistency of building type and height generates a predictable shadow area. Using these two pieces of data with solar data and electricity usage for the area, we calculated that by covering 25% of each roof with PV panels, we could generate a 36% surplus in electricity.

New Urbanism's
Applicability to China?



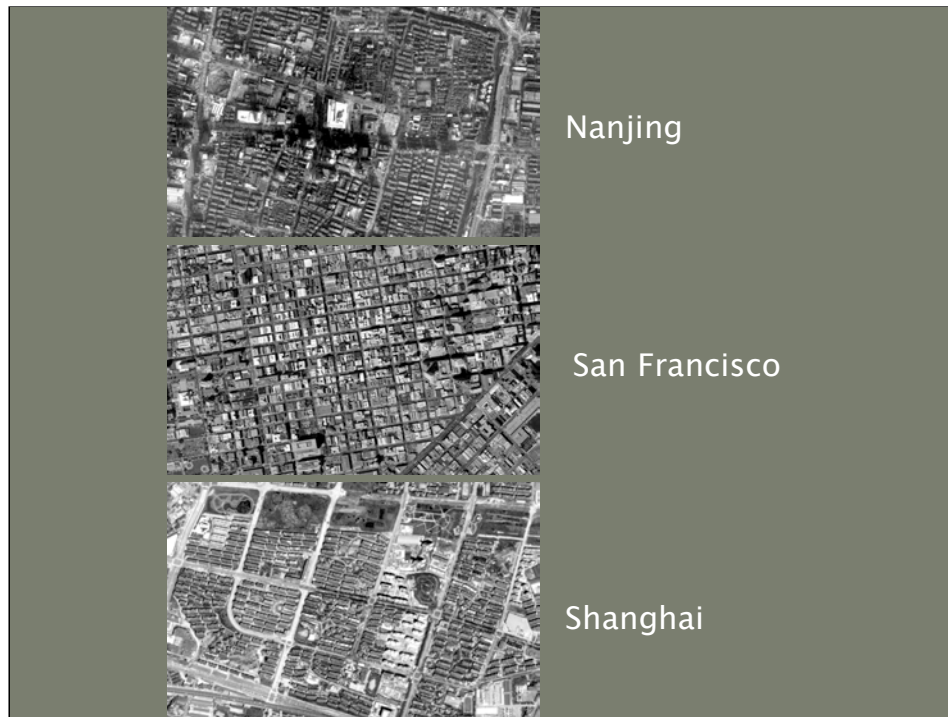
This is Nanjing.



This is San Francisco at the same scale.

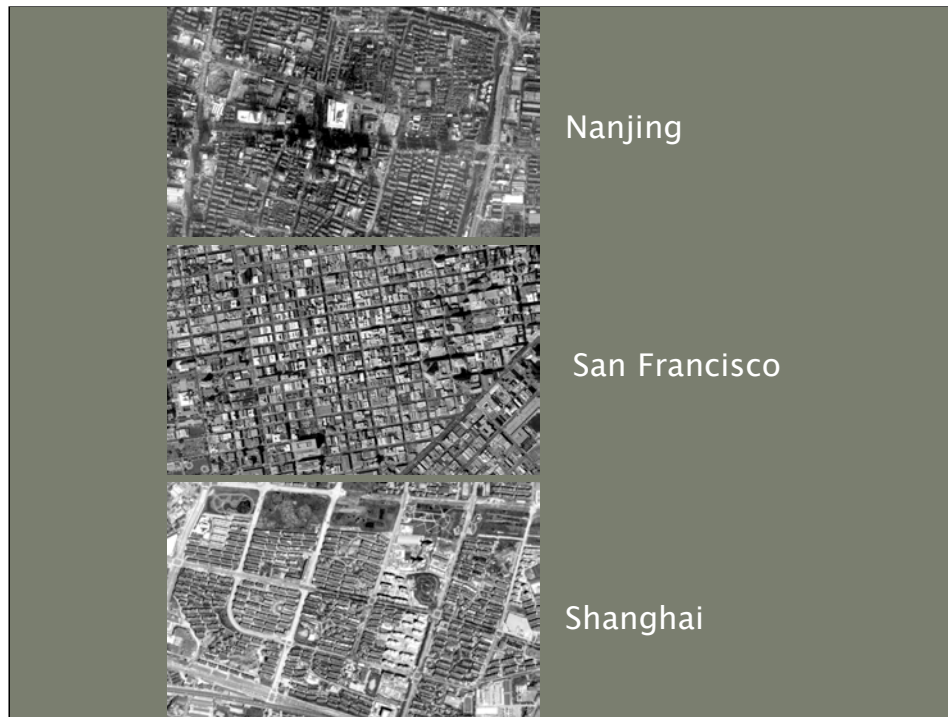


And this is Shanghai at the same scale.



In the United States, New Urbanism is sold as a package concept, however it is based on a series of time-tested principles that surpass this cult of personality. China embodies many principles of sustainability and new urbanism already, however rapid urbanization which is leading to the increasing use of energy, and the rising popularity and accessibility to cars are challenging China's traditional patterns of development as well as the global environment.

The compound has been an historical component of development in China for centuries. Quoting from David Bray's book, *Social Space and Governance in Urban China: The Danwei System from Origins to Reform*, he writes, what is "significant is the evident similarity between the socialist *danwei* form and the various compound spaces of traditional and republican China. This is not to say that the reappearance of compound forms throughout history betokens a seamless cultural continuity. Rather it can be attributed to a mimetic effect, a kind of cultural memory that reinvokes compound-style spatial formations within vastly different social contexts. In this case, the mimetic effect is underpinned by a collective mode of social practice. The compound form, as the home to the collective unit, has provided a degree of cultural and psychological familiarity within an overall context of dramatic social and political change." (Bray, p.156) Currently in China, however, the increasing polarity of wealth and the use of the car is turning the current form of the compounds, primarily housing, into homogenous enclaves of exclusivity.



Referring to Bray again, “One of the most significant changes has seen the locus of urban life shifting out from the *danwei* compound and onto the street.” (Bray, p.167) He argues that, “this shift implies that a population that was once contained within enclosed spaces has now been released to ‘float’ along the new corridors of commercial enterprise.” (Bray, p.168)

Assembling the elements of dense, large-scale housing enclaves with the commodification of the street generates an urban form that is conducive to driving. The housing compounds wall off the interior of blocks, often at a scale up to one kilometer per block, giving pedestrians, bicyclists, (and wildlife) very few options for navigating the urban fabric. The development of the informal public realm is still in its infancy in China and the semi-public realm only seems to exist within the confines of the housing compounds. Walkability is a primary issue to the health of cities and their populations. Providing smaller scale blocks where informal public spaces and semi-public spaces become part of the larger urban fabric would help to promote walkability and other forms of transit alternative to the car. (I’m not suggesting that China abandon the walled compound, I’m proposing that the walls are repositioned to allow pedestrian access through the blocks as an additional option to the street. Another health benefit related to this access is removing the pedestrian from the added pollution of car exhaust. The air quality is bad enough that the addition of always walking alongside car exhaust exposes the pedestrian to toxic levels of particulate matter.)