



## Urban Digital: Designing Virtual Real-World Cities

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You can have a penthouse in New York City, curate a museum in London, or run a Paris bistro. You can even physically live in Omaha while doing it. It's all possible in the online world of virtual cities. I'm not talking about fictitious virtual cities like [Second Life](#). I'm focusing on cyber-renderings of real-world cities like San Francisco, Philadelphia, Los Angeles, and Tokyo.

Virtual cities are computer-based, digital equivalents of cities that have enough of the qualities of real cities for the user to get a real sense of being in an urban place. These online metropolitan cyber-renderings are used in wide variety of applications – everything from evacuation simulations to learn about crowd behavior to soldier tracking systems for the military.

Real-world virtual cities are already successfully being deployed and commercialized in a number of areas:

- Entertainment and computer games
- Interactive museums and city tours
- Real estate, tourism, and travel
- 3D Yellow Pages
- Building and architectural modeling
- Telecom and security infrastructure mapping
- Crime scenario mapping
- E-commerce and advertising
- Social networking

Last year, [Planet 9 Studios](#), a leading supplier of 3D city data and software, [released for licensing](#) a set of 50 digital city models optimized for mobile applications including cellphones, car navigation systems, and GPS devices. GPS locator services are being used on mobile phones and in cars for virtual real-world city searches of addresses, landmarks, and the locations of friends.

"Much of the technology started with military and emergency responder applications like fire departments," says David Coleen, vice president of marketing for Planet 9. "Now this technology is being incorporated into cars and mobile devices so people can do real-world virtual city searches for all restaurants within one mile of where they are, or locate a friend."

The [Centre for Advanced Spatial Analysis \(CASA\)](#) and [University College London](#) cite [several kinds](#) of real-world cyber cities:

- *Web Listing Virtual Cities*, which function as [on-line guides](#), menus, and listings for advertising and tourism promotion.
- *"Flat" Virtual Cities*, which use one-dimensional maps of cities or buildings as interfaces to more information. One example is [Planet of Internet](#), which offers free citizenship to individuals, and opportunities for businesses to advertise and shop their wares.
- *Virtual 3D Cities* that provide people with a genuine sense of [walking around an urban place](#).

"A virtual real-world city has to be precise, complete, and realistic looking," says Dr. Victor Shenkar, CEO of [GeoSim Systems Ltd.](#), a virtual city builder. "It must provide a sense of 'being there,' and it must present 'intelligent' meaning that the user obtains whenever he clicks on any building, bus stop, or shop to find more information about it or even to go inside."

Shenkar says a virtual city can also become a useful Internet search tool, provided it facilitates a two-way search process comprised of: (1) click-activated "show me" functions that point the user to locations of interest when he clicks on a building or other item; and (2) click-ons for any particular 3D object at locations of interest, which will include a link to geo-coded content.

The key to the virtual real-world city evolution is smart deployment of its enabling technologies: data collection of aerial and ground photographs; appropriate 3D modeling and archiving of these photographs; and on-demand visualization of end results over the Internet.

"City searches, virtual tours, social networking, and e-shopping will all be important," says Planet 9's Coleen. "Analysts are predicting that GPS is the 'next killer app' that will influence virtual real-world cities."

— Mary E. Shacklett, *President of Transworld Data*