Sustainable China

Millions of people in Beijing and other Chinese cities are witnessing a dramatic improvement in the quality of their housing, offices, and where they eat and shop. But what will happen to city livability, traffic congestion, global oil consumption and climate change as more cities tear down once vibrant pedestrian and bicycle-oriented urban districts and replace them with the sort of new, automobile-oriented residential and office towers that seem to be rising overnight along Beijing's major arterials? Many experts, faced with this dramatic transformation of Beijing, combine a dim prognosis with a search for solutions from Europe and other international good practice locations.

Yet Guangzhou, the capital of Guangdong province with more than 10 million inhabitants, shows that the search for solutions can be closer to home. If Chinese planning bureaus can learn to facilitate rather than obstruct the kinds of positive revitalization trends which are already taking place, while developers can learn to reinvent the positive characteristics of more traditional communities in new real estate developments, Chinese cities will be well on the way to a sustainable future.

Case study areas

This article documents some of the world class models of sustainable transportation being
achieved without fanfare or recognition at sub-district levels of government in Guangzhou, in the historical core, socialist-era housing areas, urban villages, and some of the new developments. The common characteristics of each area include high density, extremely low car ownership and usage, attractive streetscapes, blocks frequently broken up by small walkways and streets, and an overwhelming reliance on walking, cycling, and public transport.

**Historical core: Xiguan**

Guangzhou’s historical core, continuously inhabited for 2,200 years, is typified by the Xiguan area of Liwan District, where the historical continuity of the city is immediately perceptible. Today, the area faces high pressure for redevelopment from business, luxury residential, commercial real estate, and tourism sectors. Office, retail and residential towers sprout wherever they can. The retail business attracts shoppers from the entire metropolitan area to revamped historic streets such as Xiajiu Lu.

Despite the frenetic development, car ownership remains extremely low, accounting for less than 1% of trips in Xiguan. One reason why car ownership is so low is the lack of space for driving and parking. Of an estimated 274 streets and alleys in the 0.7 square kilometer area, less than a dozen are accessible to cars. The rest constitute a dense and intricate network of pedestrianized alleyways, rich in architectural, cultural, commercial and social features. Walking and bicycle usage as a percentage of trips is higher than in other areas of the city due to the more limited reach of buses in this area.
Typical entrance to one of Xiguan’s extensive network of alleyways.

Unlike in many other Chinese cities, the historical core areas of Liwan, Haizhu and Yuexiu districts are (mostly) not being simply neglected and gradually abandoned, waiting for developers to step in, demolish the old buildings and replace it with pedestrian and bicycle-hostile high-rise superblocks. For example the Fengyuan Street Committee – the lowest level of government in Chinese cities – in 2007 re-paved and rehabilitated a 250m alleyway at Hejiacidao, using high-quality grey limestone avement, with grey brick walls set up to screen the sometimes unsightly adjacent buildings. Amenities such as planters, benches, children playground equipment, ping-pong tables, and pergolas are included. All these elements signal high quality pedestrianized settings for residents and visitors alike. The streets nearby also feature high quality, regularly maintained urban design elements such as historical granite paving, gateways, bollards to prevent vehicular access, shade, toilets, and parks.

1940s-1990s era walk-up apartments: Guangyuan Xincun

The Jingtai Jie Street Committee of Guangyuan Xincun, located just south of the old Baiyun Airport and covering roughly 0.5 square kilometers, has together with local residents transformed the area into one of the most livable parts of the city.

When the area was first built up in the 1980s, developers did not attend adequately to corresponding infrastructure outside the building such as pavement, public space, sewage, and water, which left many festering problems.

Guangyuan Xincun’s short-lived gantry for controlling car entry
The Jingtai Jie Street Committee took over the management of these issues, and in the last couple of years has built several parks, installed high kerbs to prevent illegal parking, restricted car parking to perimeter areas, narrowed roads and tightened intersection radii, repaved with porous bricks and widened walkways, pedestrianized several streets, allowed cycle rickshaws to replace motorcycle taxis (motorcycles were banned citywide from 1 January 2007), planted shade trees, attempted to control cars entering the area, overseen the proliferation of ground-level shops in existing buildings, and installed seating, shade and other design elements.

New parks, and public space improvements

The walkway improvement project, intended to restrict cars, was designed under the Street Committee’s supervision by the Guangzhou Baiyun Design Institute and Huazhong Technology University, with funding from the City Construction Commission, and implemented last year.

In August 2008, using their own funds, the Street Committee installed a sentry box with a gantry to control the entry of cars into the area at a critical bridge. This would effectively turn the area into a ‘traffic cell’, in which cars could enter but could not drive through, whereas pedestrians and cyclists could move freely, thereby further reducing car traffic and entrenching walking, cycling
and buses as the main transport modes of the community. Car owners, a tiny but very vocal minority, objected to the restrictions, and the Urban Administration Office asked the Street Committee to get the approval of the Planning Bureau for the measure. Approval was not granted and so the traffic cell concept did not last beyond the first few days of operation.

Guangyuan Xincun improvements: parks, walkways, roads, public spaces.
Santai park was built as part of a program funded by the City Construction Commission to rehabilitate a polluted waterway. The park is built over the waterway, and is maintained by different street committees. The western part, under the Sanyuanli Street Committee, is neglected and unattractive. The eastern part, maintained by Jingtai Jie Committee of Guangyuan Xincun, is well-maintained and popular.
**Tianhe Nan and Liuyun**

Located in the Tianhe new CBD area just behind two of the city’s largest shopping malls, the Tianhe Nan and Liuyun communities, like Guangyuan Xincun, consist of walk-up apartment buildings up to 9 storeys high. Built in the early 1990s, the buildings did not originally include any provision for ground level shops, and the community was fenced off, not allowing public access. However, starting from the early 2000s, walls were removed, shops were retrofitted in the ground floors of the buildings, interior streets were closed to cars, and high quality paving, greenery and design elements installed. The shops were successful and now demand high rents as well as a 20,000 yuan fee for the conversion from apartment to shop. The ground level shops and associated high quality pedestrian facilities and public space design elements have spread, virus-like, to adjoining communities. The main areas are car-free, with easy access to bus routes and a metro station.

Once again the main opposition to this ‘car free development model’ of urban revitalization came from planners, who objected to the change in use of the ground level apartments from residential to commercial. In 2000 the city issued a regulation banning such conversions. In 2002 the regulation was revoked. In 2005 planning officials made a renewed push to close down the newly established ground level shops, but public opposition led to relaxed enforcement of the ban in 2007.
Most recently, in early 2009 the Provincial Government issued a regulation “Regarding Employment Promotion and Encouraging the Entrepreneur-Driven Work”, which includes a stipulation that companies and individual entrepreneurs may change their apartments from residential to commercial use.

**Jiangnan Xi Lu**

Jiangnan Xi Lu, in the heart of the Haizhu area south of the Pearl River, was developed in the 1980s with similar housing stock to Tianhe Nan and Guangyuan Xincun, covering an area of around 0.25 square kilometers. Originally built as dormitories for socialist era work units, without ground level shops or public access, in recent years – and accelerating during 2008 and into 2009 – the same kinds of improvements seen in Guangyuan Xincun and Tianhe Nan have proliferated. The result is a revitalized housing stock, convenient ground level shops and business opportunities, and a high quality pedestrianized street environment. Residents and visitors overwhelming rely on walking and buses as the main transport modes, with bicycles the main support mode, and very low car ownership and use.

In February 2009 a meeting of related street committees, the district government and the City Construction Bureau took the pedestrian-oriented development trends a step further, agreeing that the area's main traffic artery, Jiangnan Xi Lu, would in future be fully pedestrianized.
Urban villages: Tangxia

Guangzhou’s dozens of ‘urban villages’ are overbuilt, extremely dense areas of informal housing, primarily accommodating migrant workers. The former villagers are now wealthy absentee landlords, content to maintain a few ancestral shrines. Larger villages such as Tangxia house an estimated 30,000 people. Housing conditions are frequently overcrowded and unpleasant. Seen as a scourge by planning officials and academics, the urban villages nevertheless have some positive characteristics.

Shipai village playground - stone table tennis

Car ownership is virtually non-existent, because cars cannot enter the narrow streets. Now that Guangzhou has banned motorcycles, these narrow streets are pleasant locuses of neighborhood activity. Most needs are met within walking distance, and the presence of the urban villages even in the city centre provides proximity to employment. For longer distance trips, inhabitants primarily use buses. A dozen urban villages line Guangzhou’s 23km Bus Rapid Transit corridor (currently under construction), with village residents forming the bulk of the system’s passenger base. Bicycles are an important mode in the urban villages, especially since the ban on motorcycles came into effect.

Tangxia village main north-south road
The positive side of poor housing conditions is that residents spend a lot of time on the streets, which makes for extremely vibrant streetscapes and lots of neighborhood social interaction, which is particularly valued by older and younger people who often feel isolated. Combined with the intricate networks of alleyways and continually changing impact on senses of sight, smell, and hearing, the urban villages provide a stimulating and attractive walking and social environment. While they have many drawbacks and their gradual passing is inevitable, rather than dismissing them, planners and designers should investigate and learn from Guangzhou’s urban villages.

New high-rise developments

Many of Guangzhou’s new high-rise apartment developments are gated superblocks which sterilize streetscapes, facilitate car drivers and penalize everybody else. Yet some provide a more positive model. Junjing Huayuan, which opened in 1997, has 10,000 apartments but only 3,500 parking spaces. This ratio of one car parking space for every three apartments is typical of developments along the Zhongshan Avenue BRT corridor (see sidebar), and limited residential parking availability is the single main factor restricting even higher rates of car ownership growth in Guangzhou and resulting in a high proportion of trips by public transport.

Once again, it is the planners who have emerged as the opponents of this low-car use model, insisting on higher provision for car parking in new developments, and planning an expansion of 50,000 car parking space in the city centre by 2010. The desired parking level of one parking space per apartment is not high by international standards, but in the context of Guangzhou’s urban density and limited road network is a recipe for gridlock.
Junjing Huayan also features ground level shops, de facto free public pedestrian access (controlled vehicle access), and pedestrianized internal streets.

Pedestrianized internal streets in Junjing Huayuan

Guangzhou already has many outstanding models of high density, sustainable urban development, especially in terms of reliance on walking, public transport and cycling as the main transport modes. Street level government offices are at the forefront of moves by communities to take control of their living environment, revitalizing the building stock, pedestrianizing and upgrading streets and public spaces, and restricting car access and parking. Outstanding local initiatives such as Guangyuan Xincun, Tianhe Nan, Jiangnan Xi and Xiguan deserve recognition, study, and adaptive imitation in new developments in Guangzhou and other Chinese cities.

Further reference: all of these areas discussed, and many more, are mapped together with walking trails and photos at www.chinawalk.org.