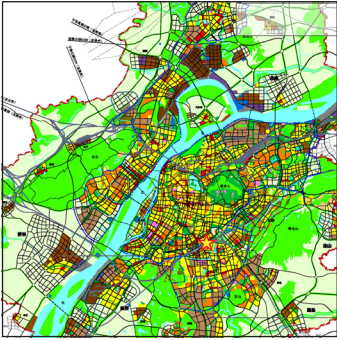
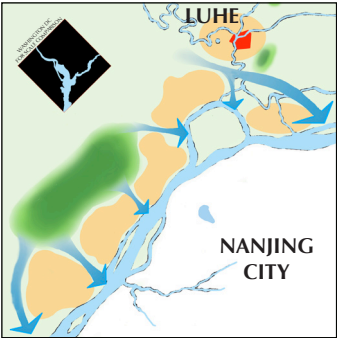


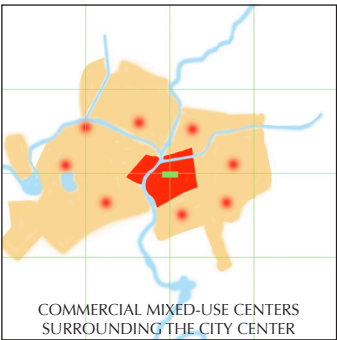
INTRODUCTION



**BACKGROUND**  
In order to receive competitive infrastructure funding from the central government, Nanjing Urban Planning Bureau (NUPB) prepared a 2039 Extension Plan. The NUPB plan proposed development of a 90 kilometer long linear city north of the Yangtze River. The new city would add 4.5 million residents to the current 8.7 million population. The plan proposed phasing out existing industrial and agricultural uses and consuming all available land between the two parallel topographic features: mountain range and river.



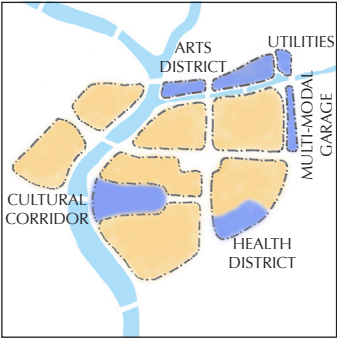
**POLYCENTRIC CITIES**  
In August 2013, an ISOCARP UPAT reviewed the NUPB plan. The UPAT team successfully argued against the 90 km linear city and offered an alternate scheme — six compact poly-centric cities separated by existing waterways and vegetative corridors. The UPAT recommended that each new city have populations of 600,000 to a million inhabitants, and the new developments expand the fabric of existing habitations within the district. NUPB selected Luhe, a town located furthest north from Nanjing as the first city to be developed.



**AWARD SUBMISSION**  
To follow the UPAT recommendations, NUPB retained Thadani Architects + Urbanists (TAU) to master plan the City Center for Luhe. The program mandated 14 million m<sup>2</sup> of commercial office/retail space with a uniform height of 100 meters. TAU negotiated for a mixed-use City Center with 9 million m<sup>2</sup> of office/retail, 4 million m<sup>2</sup> cultural/civic institutions, hotels, administration, health district, and 8,000 residential units. The remaining 5 million m<sup>2</sup> of office/retail would be incorporated into the residential zones encircling the City Center.

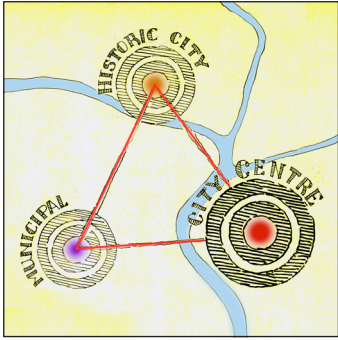


**PLAN GENERATORS**  
The TAU plan for the Luhe City Center is influenced by six existing conditions: 1) Proximity to the heritage sites in the old town of Luhe which are accessible by ferry boat and Metro, 2) the new municipal building located to the west, 3) the cultural museum and garden under construction across the river, 4) the bridge under construction crossing the river, 5) the meandering curve of the Chuhe river, and 6) creating a gracious view corridor to Lingyan Mountain to the southeast which informs cultural and mythical traditions of the region (image on left).

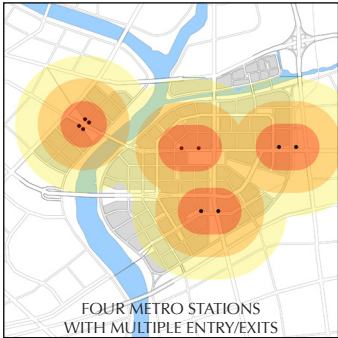


**LUHE CITY CENTER**  
The TAU plan is organized into neighborhoods and districts. Art District: Brownfield Regeneration of barrack-style worker housing on the north side of the canal shall be renovated for artist housing, studios, and workshops. Cultural Corridor: Eight sites are reserved for civic buildings such as Opera House, Library, Museums, etc. Health District: On the south side a 1,500-bed hospital, out-patient clinics, assisted living, and medical research facilities are proposed. A multi-modal parking garage and transit hub are proposed on the east.

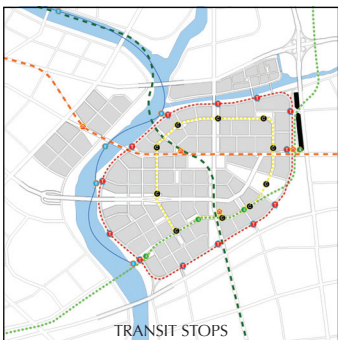
Revenues and resources can be shared more cooperatively among the municipalities and centers within regions to avoid destructive competition for tax base and to promote rational coordination of transportation, recreation, public services, housing, and community institutions.



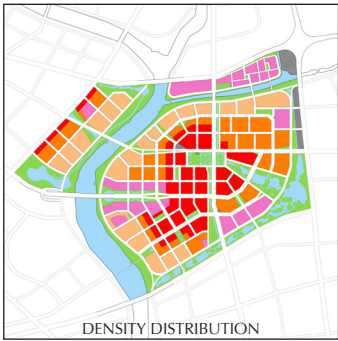
Metropolitan regions are finite places with geographic boundaries derived from topography, watersheds, coastlines, farmlands, regional parks, and river basins. The metropolis is made of multiple centers that are cities, towns, and villages, each with its own identifiable center and edges.



Where appropriate, new development contiguous to urban boundaries should be organized as neighborhoods and districts, and be integrated with the existing urban pattern. Noncontiguous development should be organized as towns and villages with their own urban edges, and planned for a jobs/housing balance, not as bedroom suburbs.



The physical organization of the region should be supported by a framework of transportation alternatives. Transit, pedestrian, and bicycle systems should maximize access and mobility throughout the region while reducing dependence upon the automobile.



Cities and towns should bring into proximity a broad spectrum of public and private uses to support a regional economy that benefits people of all incomes. Affordable housing should be distributed throughout the region to match job opportunities and to avoid concentrations of poverty.



PROJECT DESCRIPTION

The location of the new Luhe City Center is equidistant (2.75 km) from the Province's new Municipal Center and the historic town of Luhe, where several sites are being restored as tourist destinations. Planned Metrorail lines have been diverted to align and connect these three centers. The master plan is guided by three principles:

1. Create a **COMPACT** development that minimizes the impact of development on the ecology and environment. Use natural landscape areas to purify and retain stormwater run off.
2. Create a **COMPLETE** development that is autonomous, minimizes the use of automobiles, and provides all daily needs within a 5-minute walk radius of workplaces and residences.
3. Create a **CONNECTED** development that links to surrounding neighborhoods, Nanjing city, the Province, and the nation. Individual resident, worker, or visitor have transit options to all destinations.

The region has an extensive network of vehicle-oriented infrastructure. The master plan and guidelines seek to augmented the existing fossil-fuel dependent network with several alternate modes: Metrorail, Ferryboat, Tram, Bus, Bicycle Share and Dedicated Bicycle Tracks, and Pedestrian Sidewalks protected by arcades. Four Metro stations are planned which are served by two lines that intersect at the Central Square. The diagram on the left shows distances of 200m, 400m and 600m from each of the four stations. The historic small-gauge train tracks that run through the site is being restored as a tourist attraction. Visitors traveling on this train will pass through the City Center on their way to an ancient coal mining village in the northern hills. The train will also stop at the multi-modal transit hub and car parking garage, as well as stop at the southwest waterfront to permit transfer to the tram or ferry boat. The tram tracks form a continuous loop around the center and using the Ribbon Drive right-of-way. The network strives to balance mobility and accessibility for all residents and workers.

The City Center is organized into three zones, represented in three tones of orange (left diagram). The concentration of development occurs around the Central Square and reduces towards the edges. The pink and gray areas in the diagram represent civic and public facilities and lands not-for-lease within the Chinese regulations. Gray areas represent utility, service, transportation, and garage uses. One-third of the land area, 115 hectares, is dedicated to gardens, parks, and water bodies that are accessible for public recreation, leisure, and activity. These areas also serve to cleanse and retain water run-off.

To the west, across the river, a multi-purpose cultural building and garden is being built. A new bridge spanning 200m is being constructed across the Chuhe River. To link functions across the river, a cultural corridor is proposed at the bridge landing, east of the river, with eight sites reserved for civic functions. The bridge being constructed was designed to have 8 vehicular lanes. TAU successfully modified (road diet) the design to be 4 lanes with bicycle tracks and pedestrian sidewalks.

Neighborhoods should be compact, pedestrian friendly, and mixed-use. Districts generally emphasize a special single use, and should follow the principles of neighborhood design when possible. Corridors are regional connectors of neighborhoods and districts; they range from boulevards and rail lines to rivers and parkways.

Many activities of daily living should occur within walking distance, allowing independence to those who do not drive, especially the elderly and the young. Interconnected networks of streets should be designed to encourage walking, reduce the number and length of automobile trips, and conserve energy.

Transit corridors, when properly planned and coordinated, can help organize metropolitan structure and revitalize urban centers. In contrast, highway corridors should not displace investment from existing centers.

Appropriate building densities and land uses should be within walking distance of transit stops, permitting public transit to become a viable alternative to the automobile.

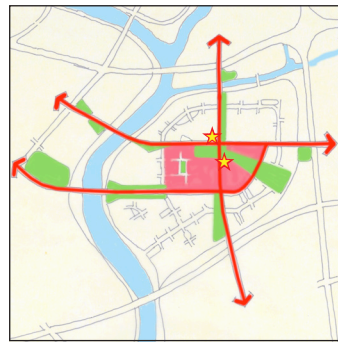
A range of parks, from tot-lots and village greens to ballfields and community gardens, should be distributed within neighborhoods. Conservation areas and open lands should be used to define and connect different neighborhoods and districts.



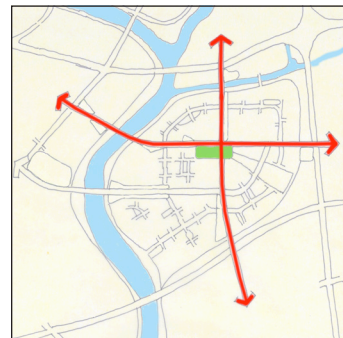
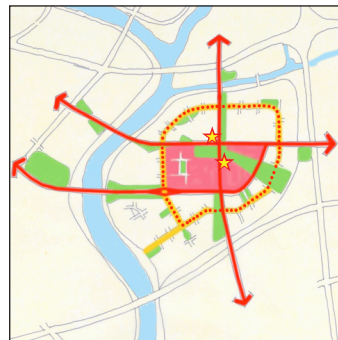
## PLAN GENESIS



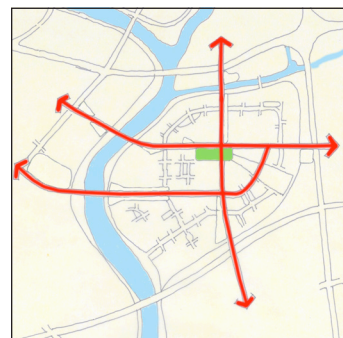
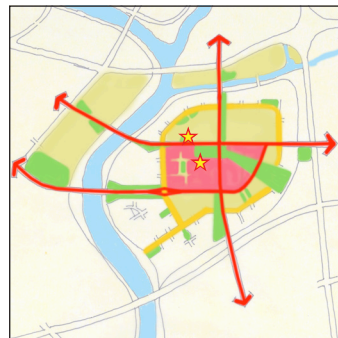
**CENTRAL SQUARE**  
The heart of the project is expressed as a large public space which serves to organize and orient the development. The 175m x 400m space is to be clearly defined by surrounding buildings



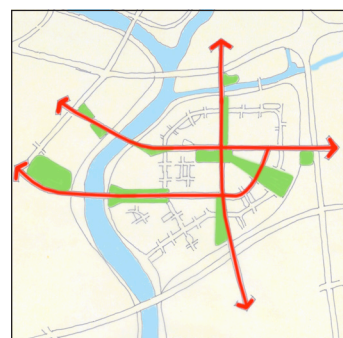
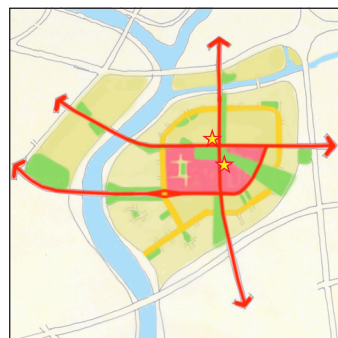
**DECUMANUS**  
A proposed vehicular, bicycle and pedestrian bridge connects the site across the river. This east-west thoroughfare will be one of the primary connectors within the City Center.



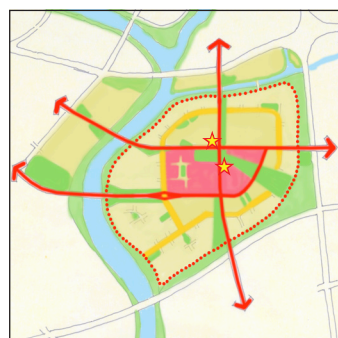
**CARDO**  
The existing bridge over the canal is extended to form the primary north-south arterial connector. The intersection of the Cardo and Decumanus at the Central Square forms the central core.



**BRIDGE CONNECTION**  
The new bridge over the Chuhe River, presently under construction, ties into the north-south and east-west spines. The design intention is to bring vehicles TO but not THROUGH the site.



**GREEN CORRIDORS**  
Each of the primary thoroughfares entering and exiting the City Center are enhanced with greenways. At the southeast, a V-shaped green forms a view corridor to Lingyan Mountain.



## CORE

The core is defined by the 3 primary thoroughfares. The two yellow stars represent the tallest buildings within the development, with both towers terminating vistas from the north and south entries.

## CIRCLE BOULEVARD

A tree-lined boulevard encircles the core connecting the neighborhoods. This thoroughfare links a series of small pocket parks and gardens that are planned within the development.

## MIXED-USE

Between the Circle Boulevard and core the mid-rise mixed-use zone supports activities and provides services essential to the sustainability of the core.

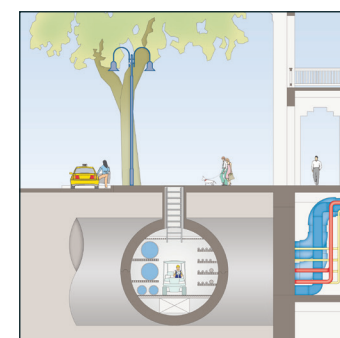
## LOW-DENSITY RING

The periphery of the boulevard consists of low-density mixed-use rowhouses that front public gardens and waterfront edges that surrounds the City Center.

## RIBBON DRIVE

The City Center is wrapped with a continuous thoroughfare which accommodates a circulating tram. This green edge links to internal park, serves as recreation space, and manages storm-water run-off.

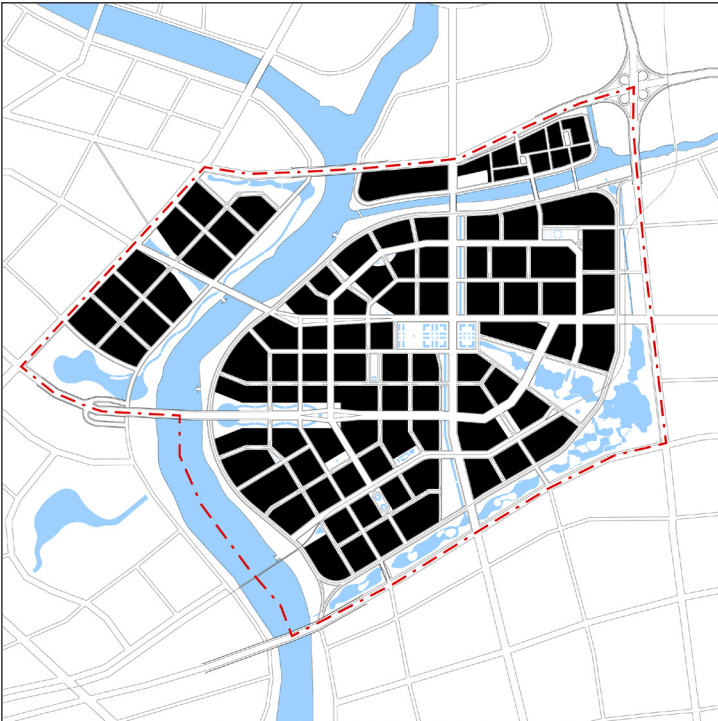
## MASTER PLAN



In addition to striving to create a beautiful, functional and sustainable environment, the Luhe City Center Master Plan recognizes the need for maximum efficiency — essential to the implementation process in China. A utility tunnel is proposed under the thoroughfare network that permits access to every city block to facilitate maintenance, repair, and upgrading of utilities and services, with minimum disruption to daily life. The electrical sub station is located at the north-east corner, adjacent to the highway interchange.



BLOCK DIAGRAM



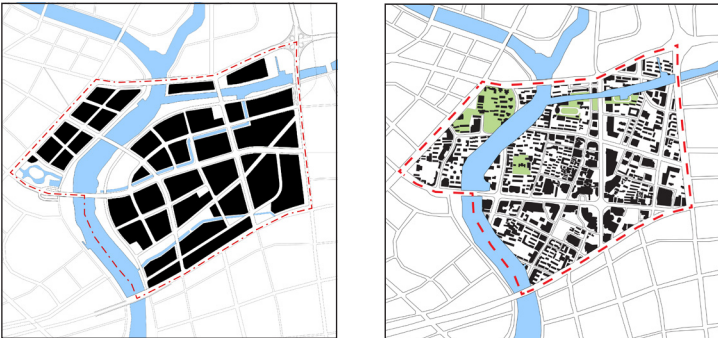
BLOCK PATTERN

The block pattern in a typical Chinese development is a grid of 300m x 300m with a 60m right-of-way. Although some Chinese planners have come to realize the inefficiencies of these large super blocks, developers insist on single plots of 10 hectares.

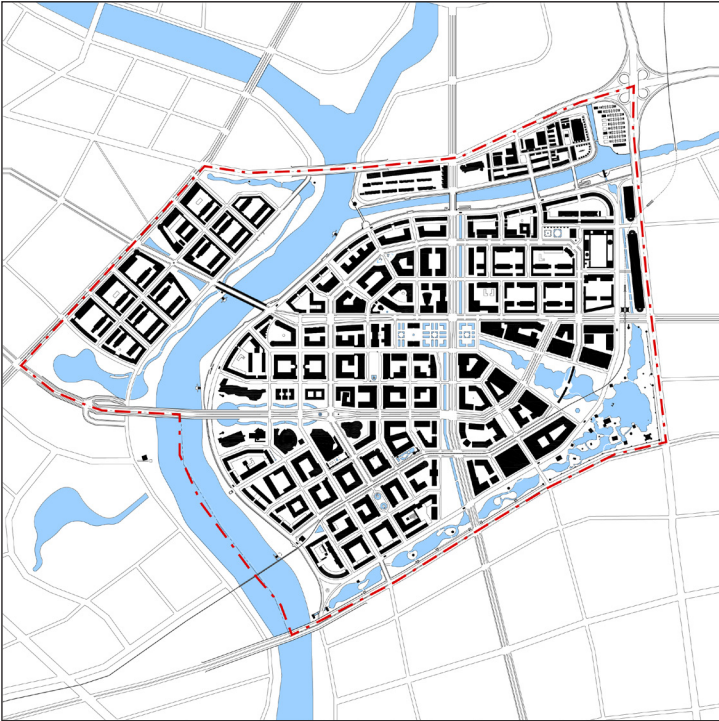
Through a 4-month process of education and training, TAU managed to negotiate a block size of 100m x 140m.

The regulating plan illustrates perimeter blocks, built up on all sides surrounding an interior space that is semi-private. Ideally, the block contains a mixture of uses, with commercial, retail, or flex spaces on the street level. Flex spaces are loosely coded to include light manufacturing, repair businesses, crafts-person studios, day-care, tutorial services, etc., that permits stay-home spouses to incubate small start up entrepreneurial businesses.

Diagram below left illustrates the super block plan prepared by the NUPB for the site. Diagram below right shows the center of Nanjing City superimposed on site.



BUILDING FOOTPRINTS

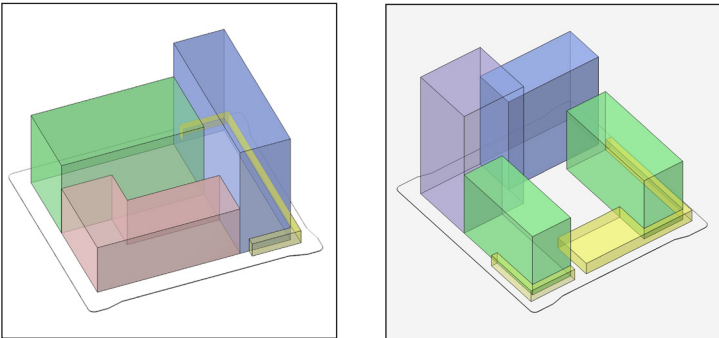


BUILDING FOOTPRINT

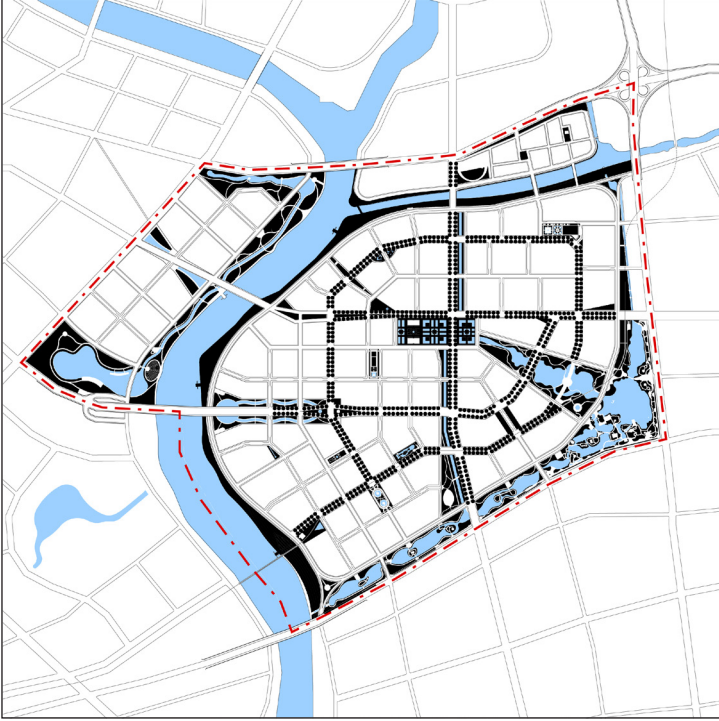
To create a legible public realm, buildings within a block, along the street, shall connect to one another so as to make a continuous street wall that defines the space of the street as a series of public outdoor rooms. Depending on use, the interior of the block is a semi-private or private realm.

To test the program, building schematics were developed (by several architects) and drawn within blocks as a suggestions of how each block may be developed. This exercise also informed the controlling heights of the edge buildings in each block. The goal was to define streets with similar sized buildings on both sides or arcaded structures. Additionally, certain punctuation points within the plan were coded to permit higher structures.

The diagrams below are typical of morphology studies made for every block within the City Center. These studies influenced building height transitions and identified attached and integrated arcade requirements.



LANDSCAPE NETWORK



LANDSCAPE NETWORK

Gardens and landscape play a significant role in Chinese life both physically and spiritually. The concept of “scenery” and the utilization of a particular section of the garden in a given season is also important. Flora and fauna help mark time within the culture.

The landscape at Luhe is a continuous network with street landscape serving as umbilical cords connecting one outdoor room to another.

The strategy employed in the urban design is to integrate landscape as part of the daily experience by making several parks and gardens within each neighborhood. Gardens are integrated into the entry/exit of transit stations to permit the interaction with nature during daily routines.

At present, many large scale (landscape urbanism) parks are being built all over the country. Having visited many, I observed that they are generally difficult to access, and are only utilized on weekends. Whereas, in urban areas, left over spaces close to residences, are utilized daily by citizens for exercise, socializing, dancing, and conversation.

The parks and gardens planned at Luhe vary in size and program, some are minimal, others are based on traditional typologies, and some are walled yet porous for public access and enjoyment.

THOROUGHFARE HIERARCHY



THOROUGHFARE HIERARCHY

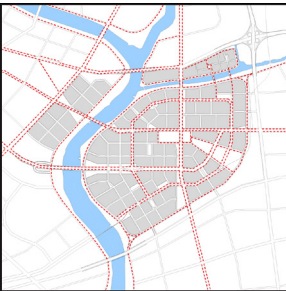
At Luhe, an interwoven thoroughfare pattern offers a variety of options to both motorists and pedestrians. A hierarchy of street types is employed to serve a range of functions and promote accessibility as well as mobility.

The diagram above indicates the mandated right-of-way widths required within the Chinese planning bureaucracy. The thoroughfare sections proposed comply within these mandated right-of-ways, but substantially reduce the number of lanes that has become the normative practice in China.

The City Center site is located within an expansive network of thoroughfares. The strategy employed for the internal street network is to permit vehicles to come TO the City Center but not drive THROUGH it.

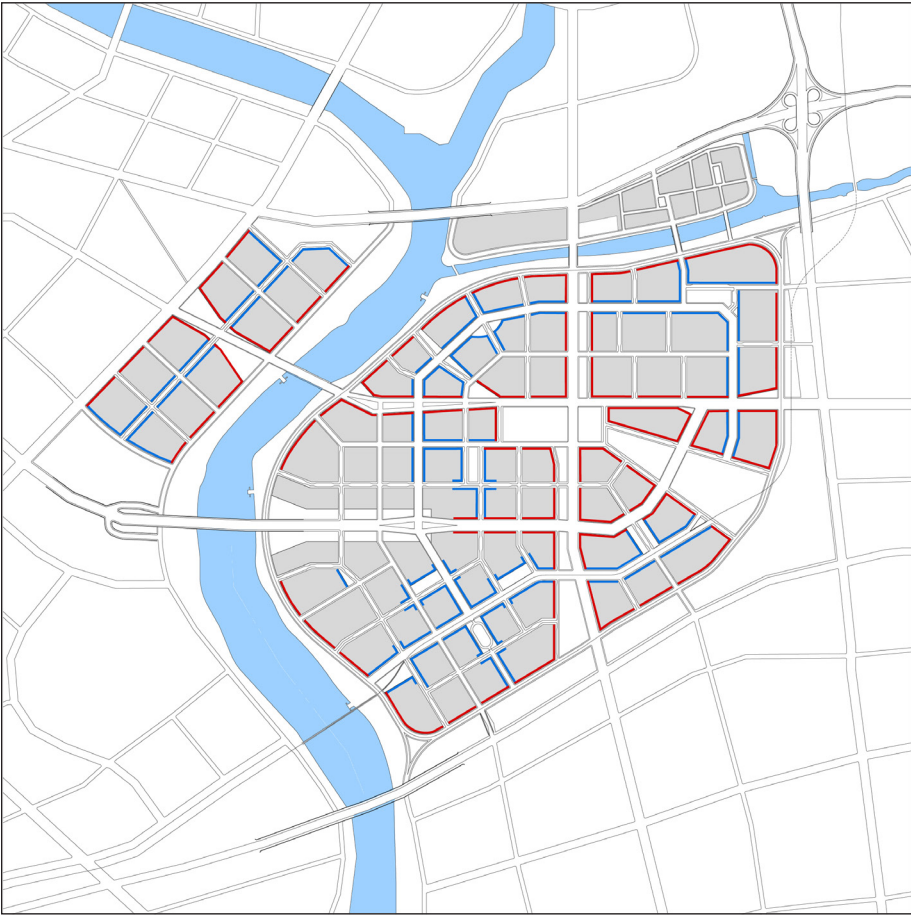
Fourteen streets connect the City Center to its surrounding environs. These entry points dissipate traffic to the finer grain streets within the center. The internal grid and small blocks provide a multitude of options for drivers to move through the center.

The diagram to the left, indicates the 3.5m wide dedicated bicycle tracks on the primary thoroughfares.





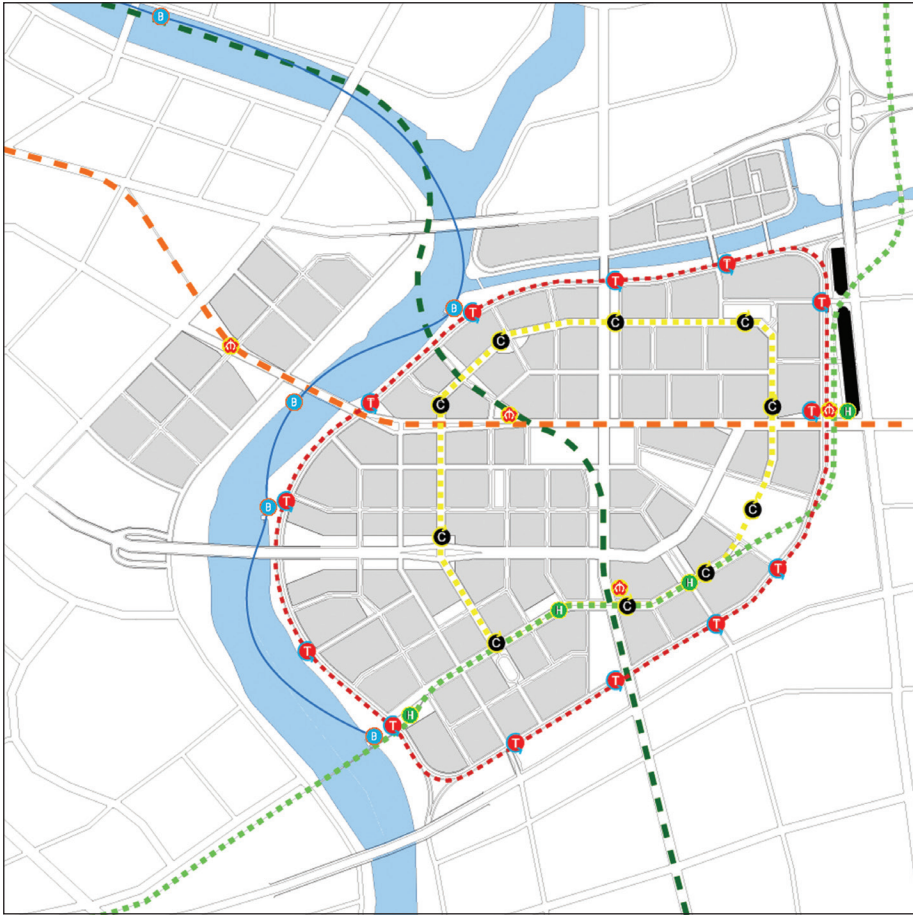
ARCADES



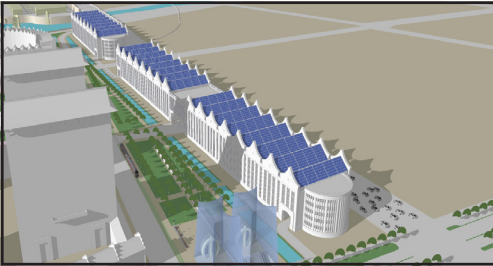
The Luhe master plan codes for 24 km of arcades that lay the framework for public activity at street level. The introduction of this urban element is in response to the climatic conditions. The Luhe region receives over 2,000 hours of sunshine and 99cm of rainfall annually. It rains year round, the average temperature is 15°C, and there is 26°C winter to summer differential. Resurrecting a traditional response found in southern China, the design guidelines mandate that all building facades on the primary thoroughfares have arcades along their street frontage. Two minimum depths are prescribed: 5m (red) and 3.5m (blue). The minimum height prescribed for arcades is 5m from street level to 2nd floor slab. Architects of tall buildings are encouraged to provide 7m or 10m high arcades. On the narrower streets where arcades are suggested, the arcade may encroach 3.5m into the right-of-way.



TRANSIT NETWORK

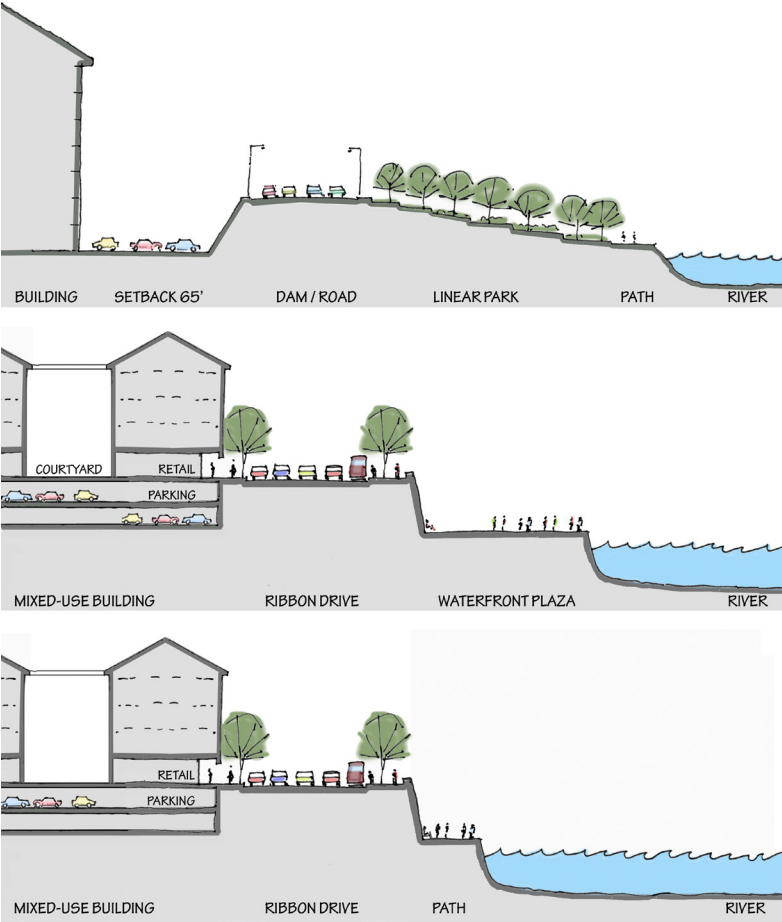


- METRORAIL**  
The Orange and Green line will serve the City Center.
- TRAM**  
A tram will circulate around the 5 km perimeter of the Ribbon Drive.
- CIRCULATOR BUS**  
A bus will circulate along the 3.5 km loop of the Boulevard.
- HISTORIC TRAIN**  
Small-gauge train passes through the City Center making several stops.
- FERRYBOAT**  
A Ferryboat connects the City Center with the historic core of Luhe.
- MULTI-MODAL STATION**  
The parking garage serves as a buffer from the highway, and permits transfer from several modes including Bike Share. Rooftop photo-voltaic will generate 2,400 MWh annually.





WATERFRONT EDGE



The upper diagram on the left, illustrates the current practice in China to build linear dams along the water's edge. Beautification and infrastructure expenditure supports building immense linear parks along the river edge, that terrace from water level up to the dam level. Usually a road is located on top of the dam. On the other side of the dam road, the topography drops down to the existing grade, where buildings are built with a 20m setback from the dam.

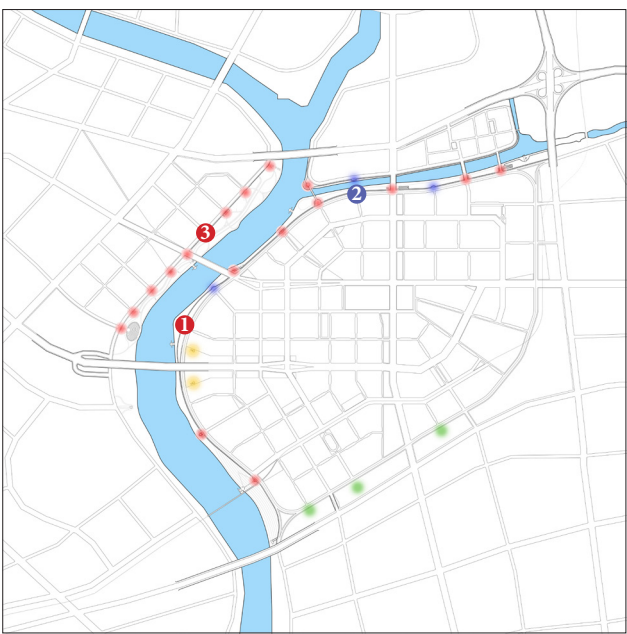
During the inclusive planning process, TAU learned that this infrastructure investment made for “the people,” invariably fails to connect inhabitants to the river and park — as they have to ascend to dam level, cross the road at designated locations, and then descend into the park.

TAU argued to widening the dam level and sought permission to build streets and buildings along an embankment at the higher dam elevation. As the two diagrams on the left illustrate, the waterfront section provides two distinct levels for human interaction.

The Ribbon Drive at the elevated level accommodates a tram that encircles the City Center.



WATER ACCESS



The common practice of building earth dams along the water edge makes access to the water edge difficult. At Luhe it is intended to make the awareness and experience of living and working by the river a prominent feature in the daily lives of the inhabitants.

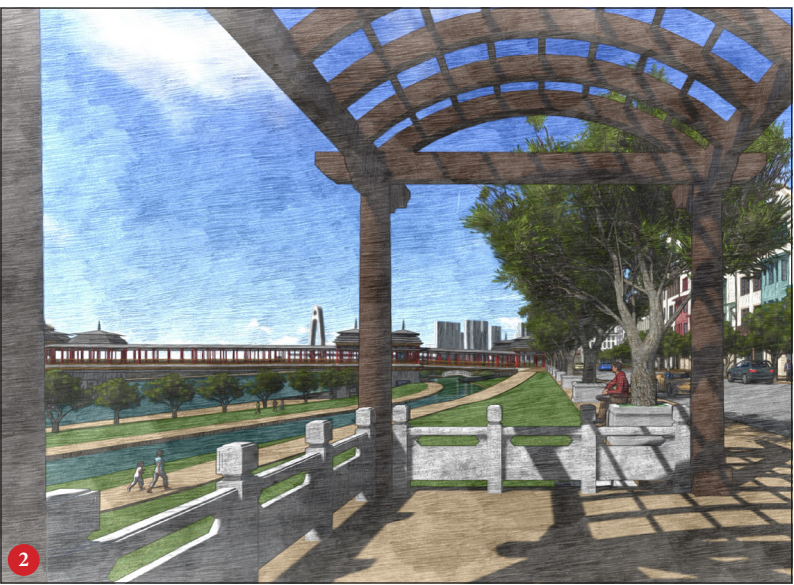
The master plan codes the majority of streets that end at the water's edge or at the southern garden have a focal point or pavilion terminating the vista.

Locations shown in RED on the diagram (above) permit access to the water level via stairs, ramp, or elevator.

Locations shown in YELLOW permit access to the water level via an underground tunnel that goes below the Ribbon Drive that encircles the City Center.

Locations shown in BLUE and GREEN are pavilions that terminate the vista of those particular streets. BLUE at the water's edge and GREEN at the garden to the south.

It is intended that each pavilion be designed by a different architect, express a particular condition, and give identity to its specific thoroughfare.

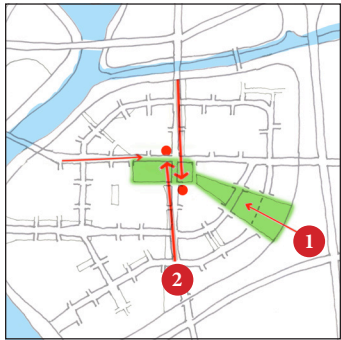




TWIN TOWERS

Skyline, scenery, concealment, and surprise are concepts in traditional Chinese architecture and landscape. Despite our best efforts we were unable to direct our clients away from their desire to have a recognizable skyline image. We settled on a pair of twin towers, 180m high, matching the height of Lingyan Mountain, which is 2 km away from the site.

The proposed tower forms terminate axial views upon entry from the north and south. They are also visible from various other locations. The view on the right, shows the towers seen from the V-shaped garden. In the foreground the large water body in the garden is transversed by an arcaded structure.

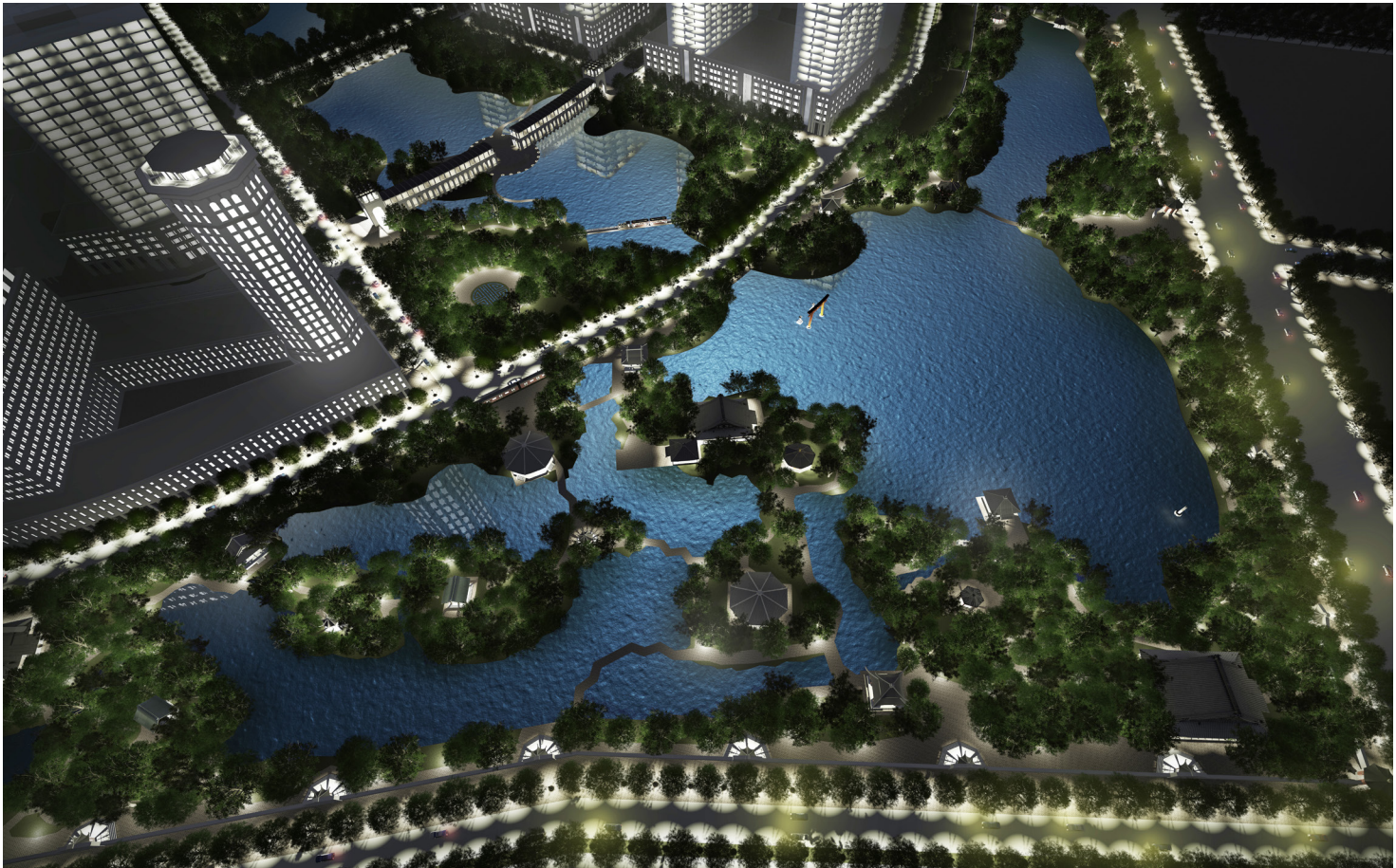
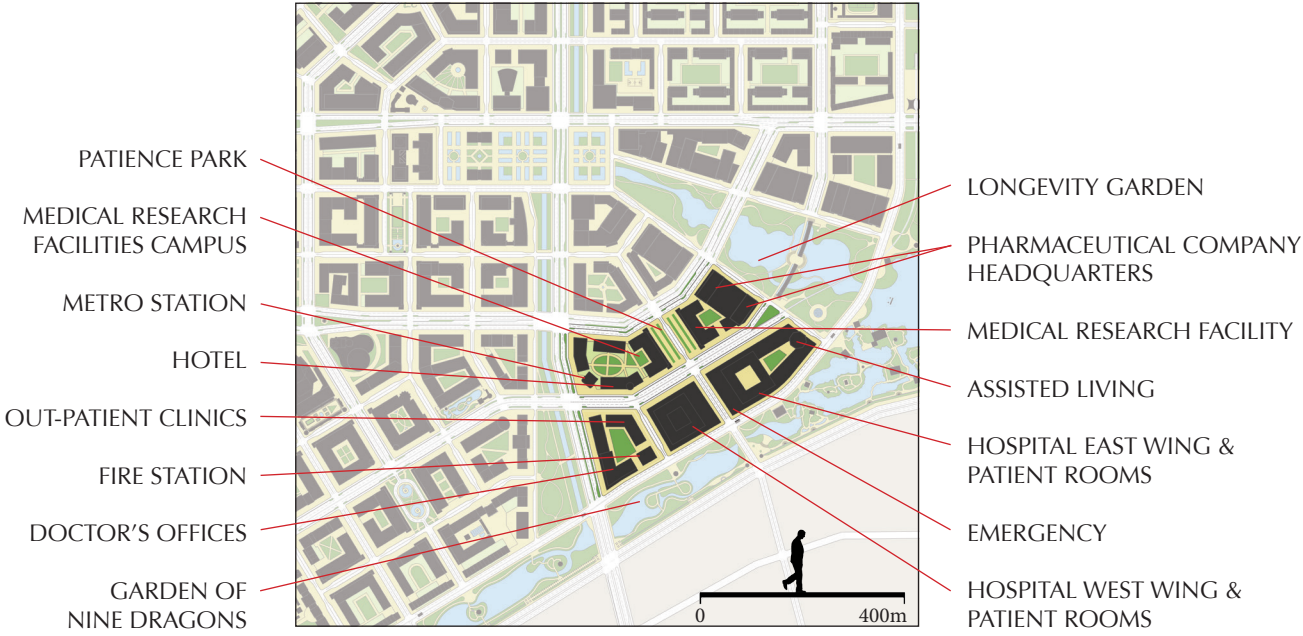


HEALTH DISTRICT

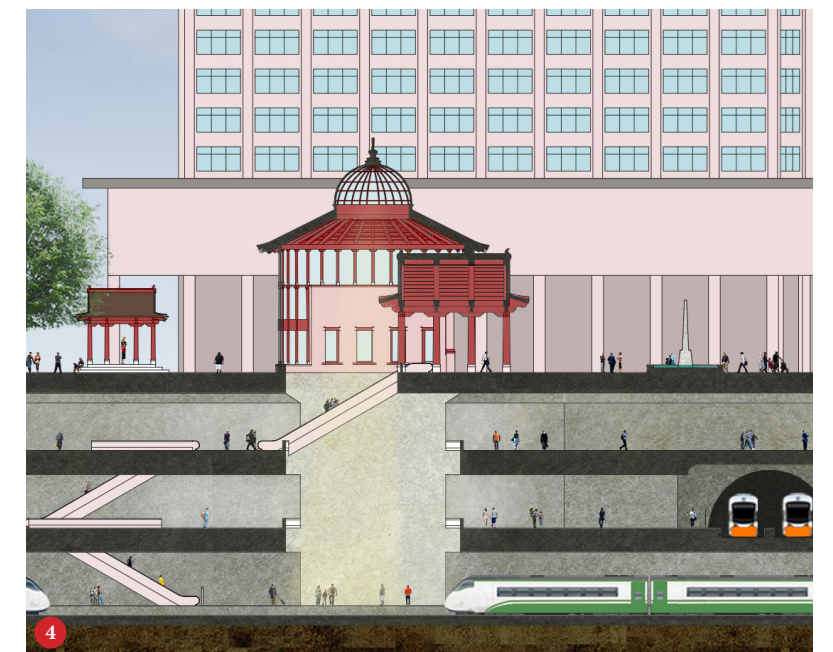
The public service of health can be separated into two categories: Healthcare and Medicare. The Luhe master plan promotes healthy living by creating an environment where all daily needs are accessible by walking, biking or transit. The experience of walking is enhanced by the inclusion of parks and gardens as well

as an active street frontage which supports commerce and entrepreneurship.

The region is extremely under-served by medical health care. A 1,500 bed hospital and health district is proposed conveniently located adjacent to a metro station, tram and bus routes. Gardens and parks surround the health district.







#### SELECT IMAGES

1. View from Southeast looking across the Longevity Garden and water body at the twin towers within the Central Square.
2. View from Central Square looking southeast at Lingyan mountain. The twin towers do not exceed the 180m height of the mountain.
3. Metro Station and plaza at the Central Square.
4. Section through Metro Station showing the use of natural light as an orientating device, that penetrates the many sub-basement levels.