

New Comprehensive Planning of Wuhan

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Jury comment:

The “New Comprehensive Planning of Wuhan” is setting the ecological framework for the sustainable metropolis region. The entry shows an advanced technology in problem identification, analysis and presentation. It also shows a sophisticated understanding of the relationship between microclimate considerations, open space provision, transportation and building strategies as key elements of sustainable comprehensive planning in Wuhan.

Planning Area

Wuhan, capital of the Hubei province, covers an area of 8,5 km² and has 8.97 million permanent inhabitants. It is a central metropolis in central China.

Background and Context

Wuhan, a nationally famous city of history and culture, major industrial, scientific research and education base, traffic and communication terminal, will have a population of 11.8 million by 2020.

It used to be one of the four famous “stoves” in China because of the problem of urban heat island effect, with temperatures ≥ 35 °C in summer.

Ecological problems in the rapid urbanization period are increasingly prominent. The City’s water area, arable land, forests and other ecological resources are being encroached upon, while green space in the central city amounts to less than 9 m² per capita.

China’s longest river, the Yangtze joins the Hanjiang River in the city center. The City’s water area covers one quarter of its total area. Wuhan is the most typical riverside & lakeshore city.

Objectives

The overall objectives of the project are: Promoting Urban Ventilation (channeling fresher and cooler air into the city), Stack Control (technical design measures to enhance or, where appropriate, avoid this ventilation), an Ecological Framework & a Sustainable Metropolis Region

- Expand and introduce population distribution based on six development axes, applying a Transit Oriented Development (TOD) mode based on “expressways, main roads and rail” along multi-mode transportation corridors
- Encourage a green traffic network by preferential public traffic, developing a rapid, high volume public transport system .

- Establishment of a livable city focusing upon community construction, encouraging a balance between homes and jobs to reduce commuting and carbon emissions
- Strengthening measures for urban sustainable development
- The use of ecological methods based on natural circulation leading to effective mitigation of the urban heat island effect

Steps of the Realization Process

In 2007, Wuhan Urban Circle was granted the “Experimental Area for Comprehensive Reform of Two-Oriented Society” status.

Thus, building a resource-efficient and environmentally- friendly eco-city has become a new aim for the spatial development strategy in Wuhan. This aim shall be met by adopting TOD Mode for sustainable metropolitan axial expansion as well as seeking urban ecological framework control for rapid urbanization period. This is supported by applying natural circulation of ventilation stack control to reduce the heat island effect.

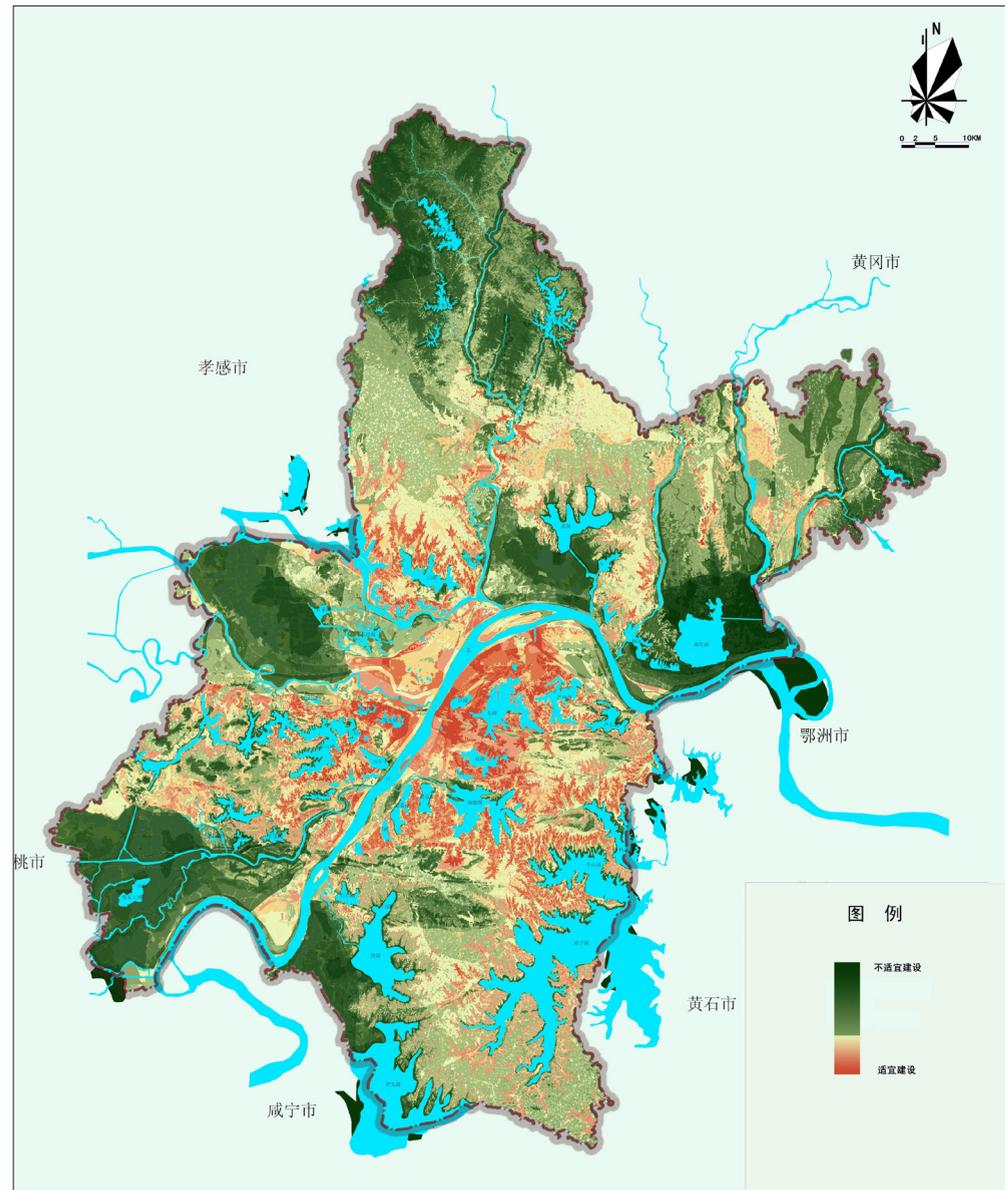
Strategy Content:

- Create a spatial development pattern of “Mixed Axes & Wedges”
- Master Planning involving six new intensive urban groups and six ecological green wedges at the core of the main city zone”, and a new approach to urban development, away from resource-oriented extensive development to an intensive ecological development pattern. The planned land area for ecology control is up to 83%.
- Construct an urban ecological framework based on the ventilation and stack control by setting up six large-scale ecological green wedges that run through the whole city mainly based on water areas, wetlands, mountains and woodlands along the Yangtze and Hanjiang rivers

- Provide extensive public green space in the urban area based on the climatology theory
- Emphasise the role of open space and the construction of main roads along river corridors in order to channel high quality air from the surrounding areas to the city center, accelerating mitigation of thermal island effect.

Innovation and Achievements

The new comprehensive planning of Wuhan helps the finding of solutions to the ecological dilemmas typical for metropolises in central China. It sets an ecological framework for the sustainable metropolis region and shows an advanced technological approach to problem identification, analysis and



presentation. That framework effectively integrates microclimate considerations with green infrastructure provision, transportation and the location of built development as key elements of sustainable comprehensive planning in Wuhan.

Since 2003, high temperatures during summer days have apparently

decreased by 1 °C on average in the urban areas of Wuhan. It means that the city has successfully shaken off its nickname “stove”.

Evolution of land construction and urban development structure plan

