

Beijing Changxindian Low Carbon Community Concept Plan

Joint Submission by Arup
and Beijing Municipal Institute
of City Planning and Design

Jury comment:

The Concept Plan is a well developed and presented project which utilizes several technical parameters and design criteria to plan and evaluate the overall project objectives. The notion of “low carbon zoning codes” highlights a traditional tool for planning as a means for obtaining current and future sustainability initiatives and goals. It is an excellent example in [district planning/urban](#) design in response to the global climate change concern and the urbanization pressure.

Planning Area

The Changxindian Low Carbon Community, located in Fengtai’s Hexi District is one of the most important development areas along the south-western corridors of Beijing city. The project is 500 ha in area and includes a future residential and commercial area, an industrial research park and open space. It will be served by a Light Rail Transit line as part of the city-wide mass transit system. The future population will be approximately 70,000.

Background and Context

Climate change is already a critical global issue. Rising trends in China’s carbon dioxide and other greenhouse gas (GHG) emissions will have a significant impact both on China and the world as a whole.

Rapid urbanization, together with rising living standards over the past two decades in China, have resulted in an increasing pressure on energy usage, resources and the environment. Without any energy and policy measures to manage GHG emissions, this unprecedented rate of urbanization will result in significant increase in GHG emissions. The country is urgently searching for sustainable ways to ease the negative implications of growth and urbanization. China has committed to reduce emission and energy intensity levels in her national 11th Five Year Plan. Innovative methods and tools are to be developed and incorporated in China’s urban planning system to enable the creation of low carbon communities in the future.

Objectives

- To prepare a mixed-use community concept plan that is guided by a sustainability framework and performance indicators; and to establish a low carbon, economically viable, socially inclusive, environmentally friendly and resource efficient community.
- To pioneer the preparation of a set of innovative “Low Carbon Zoning Codes” that incorporate these sustainability indicators, and that are implementable as statutory zoning plans to manage climate change impact.

Steps of the Realization Process

The Fengtai – Hexi District Plan (2006-2020) was prepared by the Beijing Municipal Institute of City Planning & Design (BMICPD) on behalf of the City Government, in accordance with the Beijing Urban Master Plan.

Arup has subsequently been commissioned by a local developer (who acts on behalf of, and in partnership with, the Fengtai District Government) to review the existing statutory District Plan and to produce a “low carbon” concept master plan for the 500 hectares site.

Conventional planning processes in China focus mainly on spatial elements. In this project innovative planning tools driven by resource management objectives were introduced in a two-stage planning process as part of the decision making process.

In Stage One (Innovative Strategies & Tools) three elements were developed:

- A Sustainability Framework, including Vision, Objectives and 20 Key Performance Indicators

- An Integrated Resource Management (IRM) system and the use of an Eco-Footprint to assess the efficiency of the master plan options.
- Application of Participatory Planning & Village Upgrading, enhancing Social Improvement

Stage One resulted in a master land use plan that meets the 20 performance indicators.

In Stage Two the preparation of Low Carbon Zoning Codes as Statutory Zoning Plans (Regulatory Plans) was pioneered.

Innovation and Achievements

The current Chinese statutory planning system has focused on setting out site specific development parameters at the local detailed plan level - the statutory "Regulatory Plan". The list of mandatory planning parameters does not have an adequate breadth and depth fully relevant to low carbon planning objectives. This is a key challenge for planners in China.

Hence, the Beijing Changxindian Community Concept Plan is of prime importance as a pilot in addressing this implementation issue, as it involves an institutional solution. It is a pioneering case study aimed at building low carbon development models that can be implemented, enforced, and replicated in China through innovative low carbon zoning codes.

This new approach should greatly improve the feasibility and the enforceability of implementing the low carbon planning concept in China. This pilot project clearly demonstrates the need for institutional reform in China's planning system in response to the challenge of climate change.

Sustainable Urban Design Guidelines

