Implementation & Management of the Post-Quake Reconstruction Planning for Beichuan New Town

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Achievements and mechanism of reconstruction
The only new county relocated and constructed in new places after 512 Wenchuan Earthquake

After three years of reconstruction, the new county of Beichuan has taken initial shape. Most affected people have moved in. The new county has become a model, symbol and highlight in the reconstruction after the devastating disaster.

Former President Hu Jintao “We must complete the construction of Beichuan!” “Construction of Beichuan is expectation and hope of Beichuan people and all Chinese people” “Construction of Beichuan is a remarkable project after 512 earthquake!”

Former Primer brings up the standard of “safe, livable, characteristic, prosperous, advanced, harmonious” and calls for to build new Beichuan into examples of “urban construction, earthquake relief spirit in front of disaster and cultural heritage”. 

Achievements of post-quake reconstruction

A miracle of concentrated, fast, and large-scale reconstruction
An example of urban construction project
All residential buildings are built on green building standards and equipped with environmental measures. The entire county is of 46% green rate, with per capita number exceeding national level. More than 70% of the roads are equipped with LED lighting; the first smart power grids in China and among pilot cities of three-network integration and “smart Beichuan” project

An example of earthquake relief spirit
Physical evident to spirit in front of disaster; patriotic education base; education base of socialist values and window to present Chinese mode, idea and path of development

An example of cultural heritage
With innovation based on traditional Qiang minority group in cityscape and architectural style; various but consistent styles of each single building according to their functions; Folk Museum of Qiang Nationality Group, Intangible Heritage Conservation Center, commercial streets, and other cultural facilities to promote and carry on Qiang cultures

2012 Annual Awards for Excellence of Beichuang Reconstruction Master Plan and Implementation
The planned 3-year reconstruction has been basically accomplished in two years.

The framework of new Beichuan has been formulated within 16 months from May 2009 to September 2010.

By September 2010, 715 buildings have been constructed with a total area of 1.8 million m² (1.2m of affordable housing, 4m of public buildings and 2m of factories), 69 roads and streets with a total of 65.3 km and 54-km pipelines have been finished and more than 78,000 trees and plants have been placed, during which more than 230 tower cranes have been used for 850 times, more than 350 million tons of concrete and steel 54,000 tons of steel.
The “1+9” pattern of reconstruction planning

Led by NDRC, Sichuan Provincial Government and Housing and Urban-Rural Development

NDRC points out: “Planning of housing construction, infrastructure, public service, productivity distribution and industrial restructuring, and market service should be based on the master plan and plans of urban-rural system and rural construction.”

As a spatial vehicle integrating and implementing all plans, urban-rural planning exerted vital significance in post-quake reconstruction.

Thousands of planners from one hundred urban plan institutes in 20 provinces are gathering to this 10-thousand-square-kilometer lands as a part of reconstruction work team under Ministry of Housing and Urban-Rural Development.

1. Evaluation on Disaster Scale
2. Evaluation on Loss and Damage
3. Evaluation on Environment Capacity
4. Master Plan of Reconstruction
5. Urban-Rural Planning
6. Rural Construction Planning
7. Urban-Rural Housing Construction Planning
8. Infrastructure Planning
9. Public Facility Planning
10. Infrastructure Planning
11. Planning of Productivity Distribution and Industrial Restructuring
12. Planning of Market and Service System
13. Planning of Disaster Prevention and Ecological Restoration
14. Planning of Land Use
15. Finance, Tax, Accountant, Land, Industry, partner assistance, social contributions and other policy
The mechanism of post-quake reconstruction: national system and partner assistance model. Shandong - Beichuan

**Partner Assistance Plan**
— On principle of “one province for one county”, 19 provinces are partner assistant to 19 affected areas

**Master Plan of Reconstruction**
— General objective of “to basically restore within 3 years, to develop and revitalize in five years and overall well-off society in 10 years”

**Regulations on Reconstruction**
— To specify legally the principles of reconstruction, and formulate policies on resettlement, reconstruction planning, implementation, fund raising etc.

The assistance shall be no less than 1% of local fiscal revenue of each provinces. Shandong gave 10 billion yuan for reconstruction of Beichuan, 4.2 of which into new county seat.
Category and actors of reconstruction projects

1. Shandong assistance projects (74 projects), with a total investment of 4.188 billion yuan, including projects of infrastructure, part of resettlement housing, major public facilities, Shangdon Industrial Park and Turn-key project.

2. Projects constructed by Beichuan (220 projects), with a total investment of 5.653 billion yuan (including land acquisition and resettlement projects), including construction funds of central government and self-raised funds, part of city infrastructure projects, administrative office projects, resettlement housing projects and Land Acquisition and resettlement project.

3. Social donation projects (4 projects), with a total investment of 497 million yuan, including Beichuan High School (donated by China Federation of Returned overseas), Vocational and Technical School (by Party membership dues), Folk Museum of Qiang Nationality (by Fundation Macau) and Rehabilitation Center (by Hongkong).


298 reconstruction projects in Beichuan New County, with a total investment of 10.338 billion yuan.
The national system: working mechanism for the post-quake reconstruction of Beichuan New Town

Central government

Shandong Provincial Government

Partner assistance: Assistance Headquarter of Shandong to Beichuan

Reconstruction actors: city and county government

Sichuan Provincial Government

Other assistance: China Federation of Returned Overseas, Hongkong, Macau and Taiwan

Technical Coordinator: Planning Headquarter of China Academy of Urban Plan

Ministry of Housing and Urban-Rural Development

Beichuan New County Construction Project Headquarter

Consultant: Experts and think tanks

Other assistance: China Federation of Returned Overseas, Hongkong, Macau and Taiwan

Market force: investment of industrial, marketing projects

Social force: Domestic and foreign medias

Public concerns: Affected people of Beichuan and An county

Beichuan New County

Central government
Strategies and measures for the implementation and management of the planning
The communication and coordination mechanism of “3 headquarters”

(1) The Construction Headquarters of Beichuan New Town

To responsible for Party Committee and City Government of Mianyang and Party Committee and County Government of Beichuan; to coordinate relevant actors of Shangdong, plan and design institutes and Huaxi Group to promote project of Beichuan New Town.

(2) The Front Headquarters of Shandong on Assistance to Beichuan

Representing Party Committee and Government of Shandong Province; to coordinate 17 cities to promote Shandong assistance projects to Beichuan and other projects commissioned by Beichuan.

(3) The Front Headquarters of CAUPD (China Academy of Urban Planning & Design) on the Planning of Beichuan New Town

Under the commission of city and county governments, to do the master plan, regulatory plan and special plans for Beichuan New Town; to coordinate relevant plan and design institutes and provide technical and decision-making advice to plan and design.

(4) The Headquarters of Huaxi Group on the Construction of Beichuan New Town

Successful bidder of self-contract projects to promote the construction of the group.
The "three in one" subject of planning and construction
The layout of Beichuan New Town was planned and designed by CAUPD, which is referred to as "the funnel" by local people.

After acknowledge of the Front Headquarter of CAUPD and review of Planning Committee, plans will be submit to local planning and construction management departments for administrative approval. The CAUPD Headquarter, together with headquarters of Shandong, Beichuan and Huaxi Group, will monitor and implement plans.
The working mechanism of planning and design

**Scheme collection system**
To formulate “Interim Procedures on Collection of Design Schemes for Government Investment Projects of Beichuan New Town” for important single buildings and involve first-class institutes in China, pick out the best by comparison and strict reviews of experts. 51 A-class design institutes have engaged in the design of Beichuan New Town.

**Design review system**
All designs of Beichuan New County must be reviewed by CAUPD in terms of techniques and plan, including architectural engineering, municipal engineering and landscape engineering. The whole process of "scheme design - initial design - construction drawing design" has been reviewed.

**Design connection system**
Weekly meetings are held between headquarters of Beichuan and CAUPD as well as relevant design institutes and constructors to discuss on problems and issues in construction.

**Planning inspection system**
CAUPD conducts regular inspections to supervise the implementation of plans, and informs relevant actors of issues and problems, report to three-headquarter meetings for solution to ensure smooth implementation of plans.
Reviewing design plans and construction drawings

Issuing notices and documents

- Notice on Regulating Overall Building Plan of Beichuan New Town
- Notice on Design and Plan Requirements of Enclosing Walls of Construction Projects of Beichuan New Town
- Review Requirements on General Project Plan of Beichuan New Town
- Regulations on Building Façade and Outdoor Advertising Signals and Boards

Reviewing projects and their contents

- Reviewing control indicators of planning, site plans and building façade
- Reviewing consistency with road and transport construction drawings of new town
- Reviewing consistency with construction drawings of municipal engineering
- Reviewing designs of street lamps, street furniture and advertising signs
Plans are implemented by instantly resettling affected people and assistance projects and gives priority to restoration of city functions. Based on actual needs, highlights are given to detailed plans of construction and a work flow of “case report to overall research to feasibility research of single project to formulation of TOR” was developed during planning process.
The Master Plan of New County takes account of new town construction, with special plans connecting practical engineering, which has reached beyond a level of conventional ones, taking transportation special plan for instance, which conducts in-depth analysis in factors of plot entrance/exit, roadside parking, slow traffic, accessibility facilities and intersecting; the special plan of municipal engineering in a level of regulatory plans, has achieved connection with construction drawings and given prior consideration to policies on franchises.
Less than 5 ha, the Memorial Park engaged 5 design institutes and witness of 5 masters: Minister Song Chunhua in charge of research and review, Mr. Zhang Jinqiu as Chief Consultant, Zhou Kai from Tianjin Huahui as designer of Jingsi Garden, Meng Jianmin as designer of Hero Park, Zhuang Weiming from Qinghua as designer of Hero Park, and the thematic sculpture by Ye Yushan from Sichuan Fine Art Institute. CAUPD took charge of the Site-Plan and municipal engineering. All sides work together to complete a delicate memorial park of Beichuan.
2 Overall planning

Integrated planning, design, and management -- Delicacy Management
Overall planning

Implementing guidance by new town

Plan of resettlement areas and design of buildings

Collection of Short-term plans of project construction

Macro-Control
Natural Setting
City Form
Building Heights

Medium-level Design
Public Activities
Landscape Structure
Cityscape Divisions

Micro-Guidance on Design
Public arts
Nightscape lighting
Signs and boards

Followed by special plans
Design of green space and landscape belts
Design of Lighting and Nightscape
Design of street furniture

Implementing guidance by new town

The framework of urban design planning
On a basis of urban design to build up a platform for public participation and conduct surveys on multiple plans and publish of results.

Urban design has been used as an effective design and management tool of single buildings, which ensures the effective control over project implementation, the harmony of cityscape and architectural style and provides basis for design and control.
To highlight regional characters of buildings, improve settings of mountains and waters, to build livable living scale and to present an overall spatial features of an ethnic city.
The working mechanism of planning and design

The "sample wall" system

Decoration of building facades must conform with design requirements and approved by CAUPD and design institute. Contractors must provide sample walls for review of CAUPD before implementation of projects to ensure consistency with original designs of city and architectures.
Urban design includes delicacy design of everything from bus stops, traffic signals, street lamps to other street furniture and landscape pieces, which has ensure the harmony of overall landscapes and humanity scale.
Planning committee was formed and scientific decision-making mechanism was developed.

The working mechanism of Planning Committee

To improve scientific decision-making mechanism of reconstruction, a Planning Committee was formed by Party Committee and Government of Mianyan City and Beichuan County, consisting of Party Secretary, city authority, county government, assistant from Shandong and CAUPD. The Committee will play a role of review and decision-making in plan and design schemes of New Beichuan as well as major planning issues involved in construction of the new town.
Planning committee was formed and scientific decision-making mechanism was developed.
There's no trivial matter in Beichuan. A correlated mechanism of "ministry, province, city and county" was established.

On Oct. 28 2009, a coordinating meeting was held by Sichuan Provincial Government and Department of Housing and Urban-Rural Development to promote the planning and construction of Beichuan new town. A correlated mechanism of “ministry, province, city and county” was established in the meeting, to mobilize organizational, human and technical resources of ministry and province and improve guidance on the work.
3 Scientific decision-making

Expert consulting mechanism

Premier Wen Jiabao pointed out in his inspection tour that “to allow comments prior to completion of projects, and to solicit opinions of experts and publics”.

(1) Management of the new town’s architectural style

To invite top experts in seminars of townscape and architectural style of new town.

(2) River training works of Anchang River

To invite national academicians on site.

(3) Management of road traffic safety

To invite technical experts from Beijing and Chengdu for field trips and give advice.

(4) Improvement of green belts

To invite experts in landscape from Beijing and Chengdu for field trips and give advice.

Upholding the guidance of experts, respecting science, and making full use of external think-tank.
A total of 6 academicians, 6 master designers have engaged in the design of Beichuan new town, and more than 1100 experts in the consultation and review of projects. More than 300 consultative, review and demonstration meetings have been organized.

July 13 – 14 2009, Seminar on Cityscape and Architectural Style of Beichuan New Town was held by Architectural Society of China and CAUPD in Mianyang, Sichuan.
Public participation has been highlighted all through the planning of Beichuan New Town, with five surveys on site selection, master plan, land acquisition and demolishing, housing policy and landless farmers. Singing and dancing shows and board displays have been held to promote achievements of planning and strengthen exchange between planners and the public. The public is instantly informed of relevant information and actively get involved in the process, whose opinions constitute the foundation of decision-making of government, highlighting the public policy nature of urban-rural planning.

Encouraging public participation, and respecting the ideas of local people.
Management of construction projects
As chief coordinator of projects, the headquarters take charge in the management, bidding, construction organization, progress control and budget of construction.

Shandong Assistance projects
Established under the Development and Reform Committee of Shandong Province, the Front Headquarter of Assistance Working Group of Shandong takes charge in funds control of assistance projects and coordination and connection of projects. The city receiving assistance is established with project offices to implement the bidding.

Construction projects commissioned to Shandong
Beichuan County Government commissioned Shandong to construct part of their self-construction projects, such as the resettlement housing and demolishing projects of affected people, which was funded by Beichuan.

Projects constructed by Beichuan
Public bidding conducted by the headquarter and Huaxi Group won the bidding. Funded by state funds of reconstruction and approved and managed by county government.

Projects constructed by enterprises
Organized by state-owned enterprises and financial institutes for approval and funds of projects
Project preparation – Administrative approval for project, environment evaluation, planning, construction, etc. Approved by Development and Reform Committee of Beichuan under the commission of Mianyan City. Relevant departments of Beichuan Government perform their respective duties on other administrative approvals of projects. “approving while constructing” was adopted to respond to quick construction in short period.

Project audit
Follow-up auditing was adopted in reconstruction projects, which means on-site auditing conducted by relevant bureaus to ensure proper use of capitals and improve work efficiency.

Project completion, check, acceptance, and transfer
Joint acceptance conducted by Beichuan Government and Headquarter.

Operation and maintenance
The headquarter will take the follow-up maintenance and transferred to specialized management bureau under Beichuan Government later. Shandong has assigned 400 million checks for maintenance in the late of projects.

Scientific management
Overall coordination, effective organization, and flat management at headquarters.
Way of working

3-headquarter joint meeting
3-headquarter Joint Meeting, attended by headquarters and project divisions of Huaxi Group, is held every Wednesday to discuss on major issues in construction and establish a flat and direct communications.

3-headquarter joint inspection
On-site inspection conducted by 3 headquarters every Thursday on implementation, project quality, progress and safety of projects.

Comments on construction projects
Regular or irregular comments from 3 headquarters on projects, combined with project competition to identify problems and promote efficiency.

Overall coordination, effective organization, and flat management at headquarters
People's livelihood was made the top priority, with reasonable arrangement of construction: first is projects of road and municipal infrastructure and resettlement housing, then the public facilities and industrial parks, and administration offices the last.
Project review and adjustment

Master Plan and Special Plan of Reconstruction灾（1+9）
The core—fund plan and spatial planning

Problems:
- Blindness in project application
- Competition between the local and central level
- Modification through spatial planning during implementation
- Optimizing proposal
- Problems in early stage reflected in the late clearance and summary period

Causes:
- Tight schedule and insufficient research on feasibility cases:
- Wasteful and extravagant input in construction of schools
Implementation strategies

Project review:
Recovery after disaster;
Resource sharing and facility co-construction
Land saving and intensive utilization;
Access to residents

The Beichuan Headquarter, together with headquarters of CAUPD and Shandong assistance departments, Development and Reform Committee, Planning Bureau and other relevant authorities of Beichuan has identified the contents, size, standards and distribution of reconstruction projects based on national standard regulations, reconstruction standard and special plans of reconstruction of Beichuan.

About 40,000 m² areas have been merged through integration of similar projects, saving more than 100 million yuan.

Office buildings for administration units and enterprises can be constructed separately only when the total area reaches 5000 m².
Summary of implementation experiences

**Successful experiences:**
- Nationwide system and mechanism of partner assistance
- Implementation and management mechanism of “three-in-one” and planning and coordination system of “the funnel”
- High quality of physical urban space

**Lessons & thoughts**
- Rush for quick design and research on feasibility which leads to oversized and repeated construction
- “Planning-economy” mode of government investment instead of market system
- Poor allocation of capitals, items missed in land acquisition and demolishing, over-leveraged local lending and poor ability to pay back
- Lack of full consideration in industrial and social reconstruction, leading to poor sustainability

Reconstruction of Beichuan New Town is a special attempt in the context of emergency response mechanism and large-scale construction after disaster, and marks a milestone for the entire planning area. It is believed that with more in-depth exploration and research, a more scientific and efficient mechanism of reconstruction design and planning will be developed and further used and applied in regular projects and in construction consultation and management of new districts.
Efforts on sustainable development
Sustainable development

Reconstruction to revitalization with high-quality planning, construction and management
Three issues to be solved:
industry development, employment promotion, poverty alleviation

Solutions

nTo resettle residents and restore infrastructure and public facilities, construction of industrial parks and attract investment in specialized agricultural products, electronic information, bio-pharmacy and general aviation.

nTo develop tourism, improve tourist facilities, apply for national 5A-class site and promote local image by brand design

nTo diversity population structure of new Beichuan, to promote urbanization of rural population and improve labor force quality by trainings and UNDP programmes.
Beichuan- Shandong Industrial Park

a total area of 120.7 ha., with 10,000 to 20,000 jobs

Development strategies:
（1）give priority to job creation, encourage non-polluting labor-intensive industries.
（2）requirement of intensive use of land, output ratio of industrial projects and emphasis on direct linkage between investment and land
（3）support to industries with local ethnic characteristics
（4）strategic objective of improving industrialization of Beichuan and industrial transformation in the region, introduction of large-sized key enterprises
（5）industries with high pollution and energy consumption are strictly prohibited
（6）moderate development of recreational and health industry
Beichuan Economic Development Zone – General Aviation Industrial Park

With the opening up of low-altitude air space in China, general aviation has become a competitive sunrise industry. As an important base of national defense and scientific research and production, Mianyang is equipped with good research ability and solid industrial foundation. Therefore Mianyang has decided to construct a General Aviation Industrial Park in Beichuan.

For Beichuan, it is a good opportunity and effective path to restructure and upgrade local industries.

The industry chain of general aviation

- Financial Lease
- Maintenance and repair
- Conversions
- Trustee
- Flying Club
- Exhibition
- Manufacturing
- Training

Sustainable development
Beichuan has been successfully nominated as a national 5A tourist site.

In June 2013, Beichuan County was officially named the national 5A-level scenic spot. Efforts are to be made in integration of both new and old county of Beichuan and design of city image and brand. Tourist facilities for catering, accommodation, and information service are to be improved with local spirit of anti-disaster and ethnic-featured performance. The tourism will be led by SPA resorts and ecological areas.
Employment training programs
To diversity population structure of new Beichuan, to promote urbanization of rural population and improve labor force quality by trainings and UNDP programmes.
Thank you!