Hong Kong Special Administrative Region's Post-quake Reconstruction Support Work in Sichuan, China
Sichuan Province, China

- Area: 485,000 km²
- Population: 80.4 million
- Density: 170/km²
- Per capita: US$4,046
- 6 UNESCO World Heritage Sites

Source: About.com China Travel

Sichuan Province, China


Area: 485,000 km²
Population: 80.4 million
Density: 170/km²
GDP (2011): US$340 billion
Per capita: US$4,046
6 UNESCO World Heritage Sites
Wenchuan Earthquake
2008.5.12 14:28

Wenchuan County

Wolong
Yingxiu
Chengdu
Wenchuan Earthquake
Wenchuan Earthquake
Wenchuan Earthquake
Wenchuan Earthquake
Wenchuan Earthquake

Hanwang Town
Wenchuan Earthquake

The Sichuan Wenchuan earthquake had brought about heavy casualties and massive damages:

- Casualties 69,226
  - Injured 374,643
  - Missing 17,923
  - Disaster-affected population 29.83M
  - Quake-stricken area 440,000 Sq. Km
  - Hard-hit area 100,000 Sq. Km
  - Affected 417 counties, 4,656 towns, 47,789 villages;
  - 22,000 km of State/Provincial/Local roads, 6 railway lines, 940 bridges

Sichuan’s Reconstruction Programme

- Rebuild housing (3.5 million flats in villages and 1 million flats in cities/towns/counties)
- Expedite reconstruction of schools, hospitals and community facilities. Restore public health system.
- Total construction floor for education and healthcare facilities amount to 1.8 million m² and 7 million m² respectively.
- Reconstruct 15 national/provincial roads (total 4,290km) and road networks at various levels.
- Reconstruct cultural and recreational facilities at city, town, county and village levels.
Caring & Collaborative Efforts

“One-on-One-Support”

- 19 provinces supporting 18 hardest hit counties
- Turn-key arrangement – hardware & software: financing, planning, design, construction & supervision
- Housing, infrastructure, community facilities
- At least 1% of financial income of respective provinces
Caring & Collaborative Efforts
Hong Kong’s Post-quake Reconstruction Support Work

Pay Cheque

Hong Kong Mode of Reconstruction

Sichuan
- Implementation (planning, design, tendering & construction)
- Day-to-day project management/supervision
- Compliance with Mainland legislation, regulations & standards

Hong Kong
- Funding support
- Monitoring/auditing
- Bring in Hong Kong expertise & experience

Turn-Key
Projects by Type

Healthcare

Wolong Nature Reserve

Infrastructure

Education

Welfare & Rehabilitation
Wolong Nature Reserve

- Govt-led projects: 151
- NGO projects: 32
- Total: 183

Projects by Number

- Healthcare: 35 (23%)
- Welfare: 35 (23%)
- Education: 56 (37%)
- Infrastructure: 23 (15%)
- Other: 2 (1%)
Projects by Value

Wolong Nature Reserve
- Govt-led projects: US$1.105 billion
- NGO projects: US$ 34 million
- Total: US$ 1.139 billion
Objectives

1. Ensure quality of works and construction site safety
2. Ensure effective and efficient use of public funds
3. Complete the reconstruction projects as soon as practicable
4. Bring in Hong Kong’s experience and technical know-how in planning, design and management
Project Management & Monitoring

- Quality and site safety management
- Financial management
- Progress management
Technical Audit

<table>
<thead>
<tr>
<th>Construction (Month)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18</td>
</tr>
</tbody>
</table>

- **Mobilisation**
- **Milestone 1**
  - Signing of construction contracts
  - Foundation
  - Superstructure construction
  - Annual Review
- **Milestone 2**
- **Milestone 3**
- **Milestone 4**
  - Building services/decoration works
  - Completion inspection
  - Hand-over

Periodic or surprise inspections (DEVB/Independent Consultant/RJC/Professional Volunteers)
Technical Audit

- Audit checklists
- Performance rating
- Debriefing
- Reporting
- Follow-up audits
Completion Inspection
Financial Management

- Dedicated accounts for each project managed by the Sichuan Provincial authorities
- Clearly defined project scope, budget & standards
- Stringent payment certification/authorisation
- Technical audits
- Change control measures
- Annual reviews
- Audit by Sichuan Provincial Department of Audit
Bring in Hong Kong Experience & Expertise

Engineering & Construction

HK Construction Industry 5.12 Reconstruction Joint Conference

Architectural Design/Green Building

Wolong Architectural Expert Group

Development Bureau

Academics from five Hong Kong Universities

Sustainable Development

Conservation

Hong Kong Ocean Park/ Hong Kong Ocean Park Conservation Fund
Bring in Hong Kong Experience & Expertise
主页

香港重建界5.12重建工程联席会议，四川灾后重建工作，以简约的图示，标志著不同界别、不同专业的人士同心协力。积极参与，这个图示以简约刻具的单纯绘画，但有情有义，说明了为四川人民重建家园的过程既漫长又生硬。
Experience Sharing & Promotion
Education Projects

- 56 Projects
- 180,000 students
Medical Projects

- 35 projects
- 7,000 beds
Seismic Base Isolation Design

- Applied structural design technique
- A layer of elastomeric bearings installed between building structure and foundation to decouple the horizontal motions of the ground from the horizontal motions of the structure, thereby reducing earthquake damage to the structure and its contents
- For schools and hospitals
Seismic Base Isolation Design
Lushan Earthquake, Sichuan
Magnitude 7.0
20 April 2013

- 196 people dead
- 24 missing
- at least 11,826 injured
35 projects
- rehabilitation network for 400,000 people with disabilities
Rehabilitation Network

- Provincial level: Sichuan-Hong Kong Rehabilitation Center
- County level: 24 rehabilitation centers
- Standardisation of planning and design
Rehabilitation Services

- By Hong Kong NGOs
- Medical, psychological and social rehabilitation services
- Volunteer professionals/workers
16 NGOs
32 projects
500,000 people
Provincial Road 303 &
Mianmao Road
Road Projects

To Tibet

Detour 343 km

To Gansu

Detour 170 km
Mianmao Road
Geohard:
59nos. of debris flow、61nos. of collapse、17nos. of slope
Mianmao Road

67 nos. of large scale slope, 37 nos. of debris flow, 332 nos. of collapse
Provincial Road 303 and Mianmao Road
Provincial Road 303
Provincial Road 303
Provincial Road 303

Original Design

Revised Design
Mianmao Road
Mianmao Road
- A national nature reserve established in 1963
- In 1982, admitted by UNESCO as part of “the International Reserve Net of Man and Biosphere”
- In 2006, inscribed on the World Heritage List – part of Sichuan Giant Panda Sanctuaries
Covers an area of about 200,000 hectares in the Qionglai Mountains region

Over 4,000 different species

More than 150 highly endangered giant pandas

Home to many other endangered species including: red pandas, golden monkeys, white-lipped deers and many precious plants
Uniqueness of Wolong - Nature Reserve and Special Administrative Region

Special Administrative Region
- Formed in 1983
- 1 township, 1 town and 6 villages
- Total population at around 5,000
- Four ethnic groups: Qiang, Tibetan, Hui and Han Chinese

National Nature Reserve
- Under State Forestry Administration
- Delegated to Sichuan Provincial Forestry Department
The Survived

The injured

The death: Giant Panda “Mao-mao”
## Wolong Reconstruction

<table>
<thead>
<tr>
<th>No.</th>
<th>Infrastructure and Community Facilities</th>
<th>No. of Projects</th>
<th>Project Cost (US$)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Conservation and Research &amp; Development</td>
<td>11</td>
<td>103.8 million</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>12</td>
<td>125.0 million</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>23</td>
<td>228.8 million</td>
</tr>
</tbody>
</table>
Conservation, Research & Development
(11 projects, US$103.8 million)

2 Master Planning of Wolong Nature Reserve
21 The Giant Panda Conservation and Disease Control Centre in Dujiangyan
23 The China Conservation and Research Centre for Giant Panda
31 Reconstruction of Giant Panda Wildlife Observation Post in Wuyipeng
32 Reconstruction of Sanctuary in Dengsheng
33 Reconstruction of Sanctuary in Mujiangping
34 Reconstruction of Sanctuary in Sanjiang
35 Reconstruction of Nature & Earthquake Museum
36 Restoration and Reconstruction of Footpaths for Wildlife Observation and Protection
37 Restoration of Vegetation Cover in Giant Panda Habitat
42 “Digital Wolong”
Infrastructure and Community Facilities

(12 projects, US$125 million)

22 Restoration and Reconstruction of Power Supply
24 Reconstruction of Offices and Service Buildings for Staff of Wolong Administrative Bureau
25 Gengda School
26 Reconstruction of Wolong Primary School
27 Wolong Medical and Health Care Facilities
28 Wolong Social Welfare Centre
29 Reconstruction of Refuse Disposal and Transfer System
30 Reconstruction of Water Supply and Drainage System
38 Restoration of Local Roads
39 Geological Hazards Prevention and Management
40 Restoration and Reconstruction of Ethnic Cultural Heritage
41 Erection of Signs and Stakes
The China Conservation and Research Centre for Giant Panda
Project Scope
- Construction Area: 19,844 m²
- Breeding, Research and Education Zone including Veterinary hospital; research and administration facilities, tourist center and education center etc
- Giant Panda release into the wild: transition zone and training zone

Aim
- Giant panda research and development
- Promotion and education on protection of giant pandas and conservation
- Giant panda wild reintroduction

Investment and Progress
- Overall investment: US$ 30 million
- Anticipated completion: mid 2014
Breeding, Research and Education Zone

Transition Zone: Giant Panda release into the wild

Training Zone: Giant Panda release into the wild

The China Conservation and Research Centre for Giant Panda
Major Facilities:
1. Tourist Centre
2. Research and Education Centre
3. Veterinary Hospital
4. Office and Research Building
5. Breeding Enclosures
6. Adult Giant Panda Enclosure
7. Giant Panda Cub Enclosure
The China Conservation and Research Centre for Giant Panda

Aerial view – Master Layout

- Food Processing Area
- Veterinary Hospital
- Quarantine Building
- Breeding Enclosures
- Office and Research Building
- Adult Panda Enclosures
- Panda Cub Enclosures
- Research and Education Centre

Aerial view – Master Layout
Research and Education Centre

The China Conservation and Research Centre for Giant Panda
The China Conservation and Research Centre for Giant Panda

Office and Research Building
Adult Panda Enclosure and Playground
Panda Cub Enclosure

The China Conservation and Research Centre for Giant Panda
The Giant Panda Conservation & Disease Control Centre
Project Scope
- Construction Area: about 12,524 m²
- Research laboratory and veterinary hospital
- Panda enclosures
- Scientific research
- Quarantine and monitoring facilities
- Tourist center

Aim
- To isolate the sick pandas for preservation and development of the core panda group

Investment and Progress
- Overall Investment: US$ 19 million
- Anticipated completion: end 2013
Master Layout

1. Tourist Centre
2. Veterinary Hospital
3. Disease Control and Research Centre
4. Administration Building
5. Quarantine and Monitoring Building
6. Activity Centre
7. Staff Quarters
8. Panda Enclosures
Tourist Centre

The Giant Panda Conservation & Disease Control Centre
Quarantine and Monitoring Building

The Giant Panda Conservation & Disease Control Centre
Quarantine & Monitoring Building

Panda Enclosure

Treatment Room

Food Preparation Room
The Giant Panda Conservation & Disease Control Centre

Veterinary Hospital
The Giant Panda Conservation & Disease Control Centre
Staff Quarters & Activity Center
Green Building Label

- 3-Star Chinese Green Building Label
- Main Features:
  - Rainwater harvesting System
  - Methane generation
  - Geothermal heat pump
  - Energy efficient E&M installations
  - Use of recycled materials
Giant Panda & Wildlife Observation Stations

Conservation and R&D
Giant Panda Wildlife Observation Stations

- Dengsheng Station
- Sanjiang Station
- Mujiangping Station
- Gengda Spot
- Luerping Spot
- Haoziping Spot
- Balang Mountain Spot

Dengsheng Conservation Station
Sanjiang Conservation Station
Balang Mountain Spot
Monitoring Stations / Patrol Network

- 1000 km patrol network
- 80 stations
Restoration of Vegetation Cover
“Digital Wolong”

3 Protection and Scientific Research
- Data Storage
- Data Platform
- Integrated Data Services Platform
- Protection and Scientific Research Application Platform

2 Communication Applications
- Video conference
- Network monitoring
- Electronic mail
- Network audio system

4 Administration & Security Control
- Electronic Management System
- Security System

5 Education and Publicity
- Experience centre
- Education Platform
- Multimedia
- Wolong Network

1 Communication Infrastructure
- Wired Network
- Wireless Network
- Internet
- Network Management System
Wolong Primary School / Gengda School

Infrastruture and Community Facilities
Restoration of Cultural Heritage

Infrastructure and Community Facilities
Healthcare and Social Welfare Facilitates

Wolong Social Welfare Centre

Gendga Healthcare Centre

Wolong Hospital

Wolong Social Welfare Centre
Power Supply, Water Supply and Drainage Systems

Infrastructure and Community Facilities
Administration and Staff Facilities
Sustainable Development of Wolong

- Expert groups comprising mainland and HK academics and experts
- Workshops and seminars to share experience and explore strategies to assist Wolong to pursue sustainable development
Sustainable Development of Wolong

5 Key Focus Areas

- Protection of the Ecological Environment
- Research on Giant Pandas and Biodiversity
- Community Development
- Human Resource Development
- Asset Management & business operation
Wolong Sustained Collaboration Memorandum of Understanding

1 March 2013

- Sichuan Provincial Forestry Department
- Development Bureau
- Hong Kong Ocean Park
Thank You