



arcasia – ACSR Symposium on Architecture and Social Responsibility, 10 October 2013, Kathmandu, Nepal

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



Sichuan Province, China



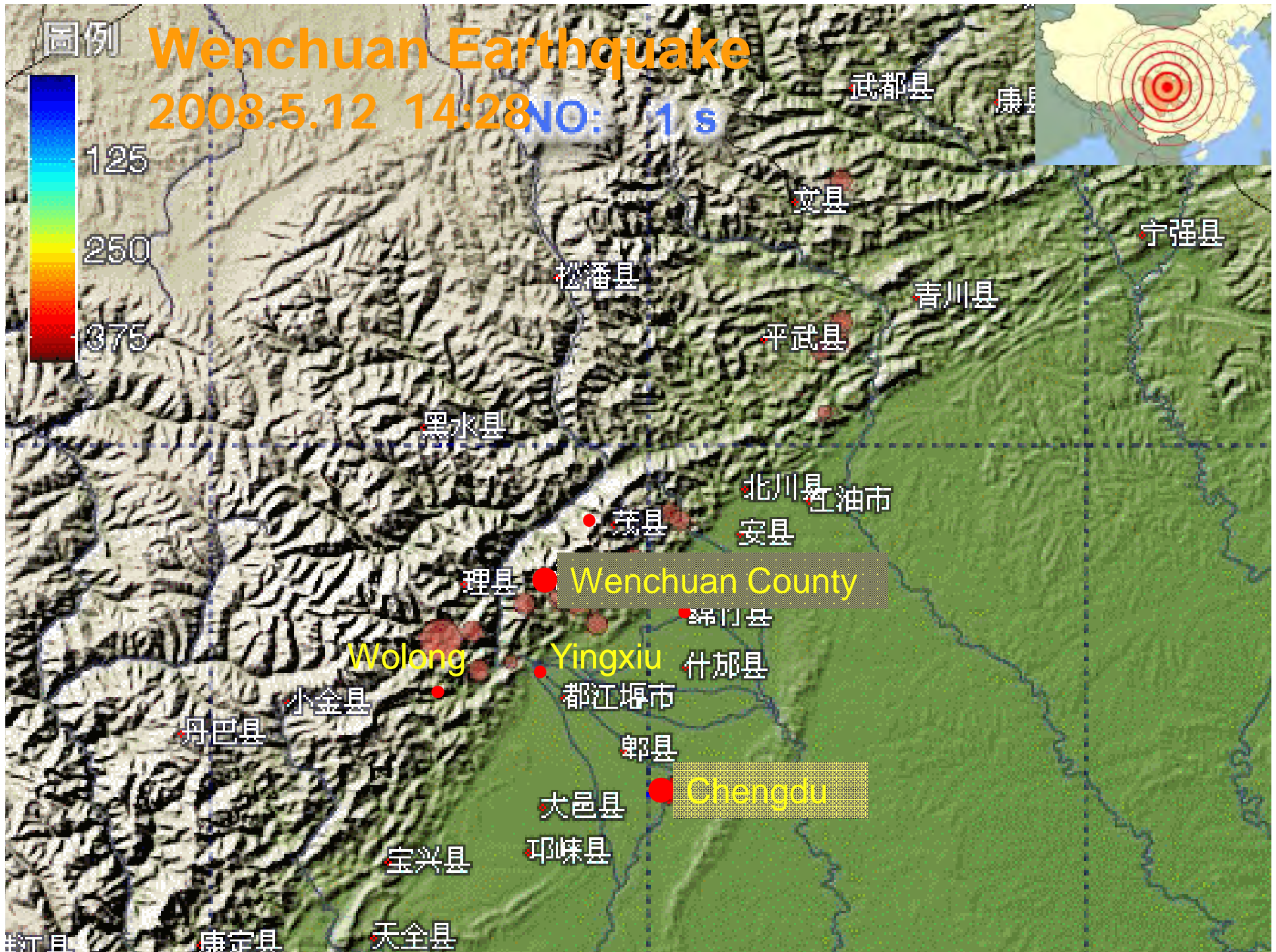
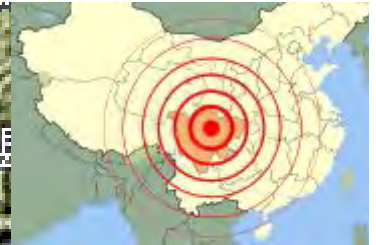
- Area : 485,000 km²
- Population : 80.4 million
- Density : 170/km²
- GDP (2011) : US\$340 billion
- Per capita : US\$4,046
- 6 UNESCO World Heritage Sites



圖例

Wenchuan Earthquake

2008.5.12 14:28 NO: 1 S



江油市 什邡县 郫县 大邑县 邛崃县 宝兴县 天全县 康定县 丹巴县 小金县 理县 茂县 汶川县 平武县 青川县 武都县 康县 宁强县

Wenchuan Earthquake



Wenchuan Earthquake



Wenchuan Earthquake



Wenchuan Earthquake



Wenchuan Earthquake



Wenchuan Earthquake



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

(ref. State Government Report, Aug 2008)



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”

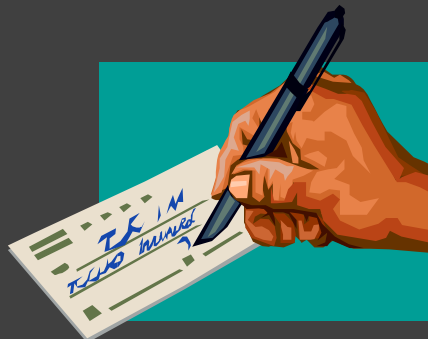
- 19 provinces supporting 18 hardest hit counties
- Turn-key arrangement – hardware & software : financing, planning, design, construction & supervision
- Housing, infrastructure, community facilities
- At least 1% of financial income of respective provinces

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



Healthcare



Projects by Type

Infrastructure



Wolong Nature Reserve



Education



Welfare & Rehabilitation



Healthcare

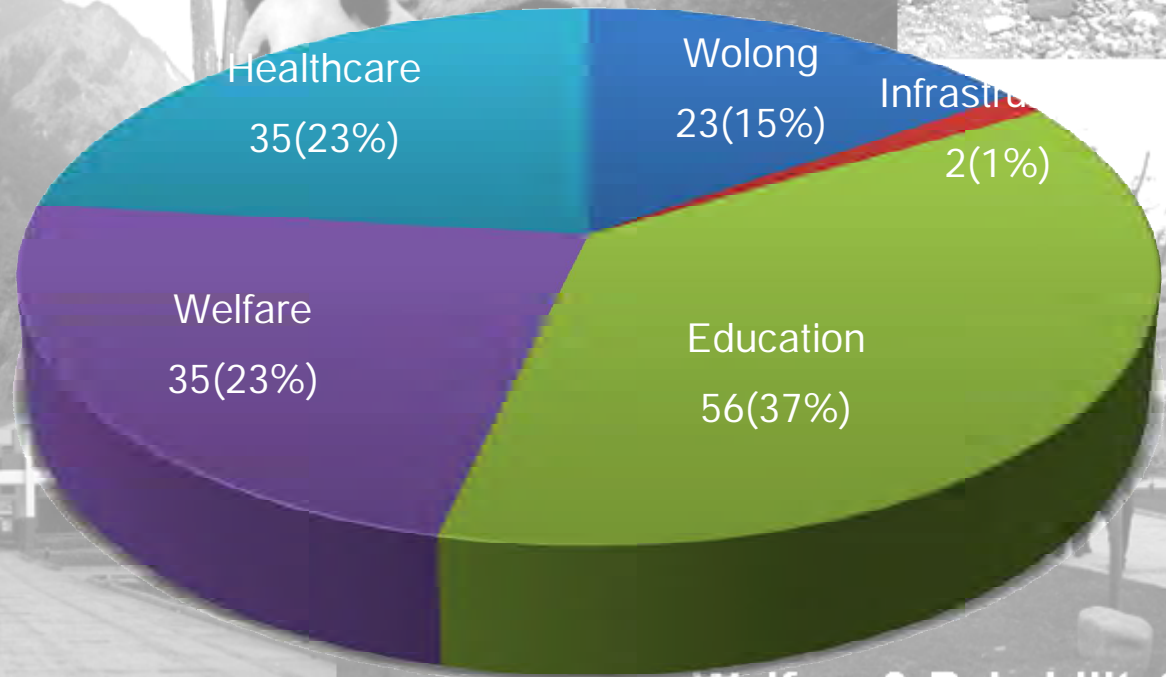
Infrastructure

Projects by Number

Wolong Nature Reserve

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

Govt-led projects



Education

Welfare & Rehabilitation

Healthcare

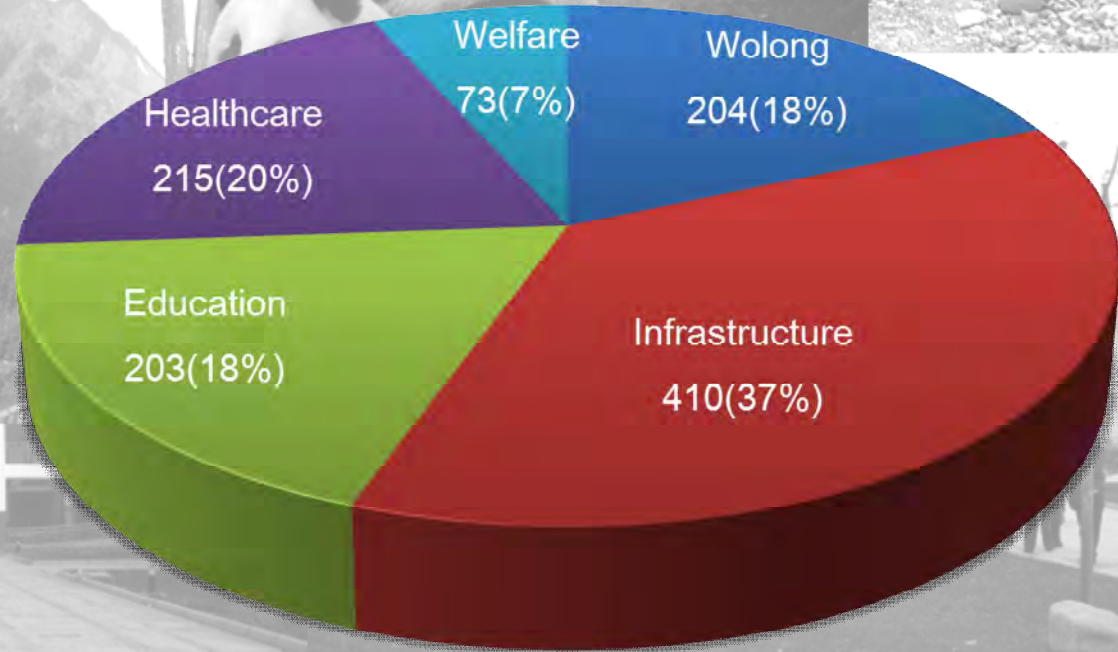
Infrastructure

Projects by Value

Wolong Nature Reserve

- Govt-led projects : US\$1.105 billion
- NGO projects : US\$ 34 million
- Total : US\$ 1.139 billion

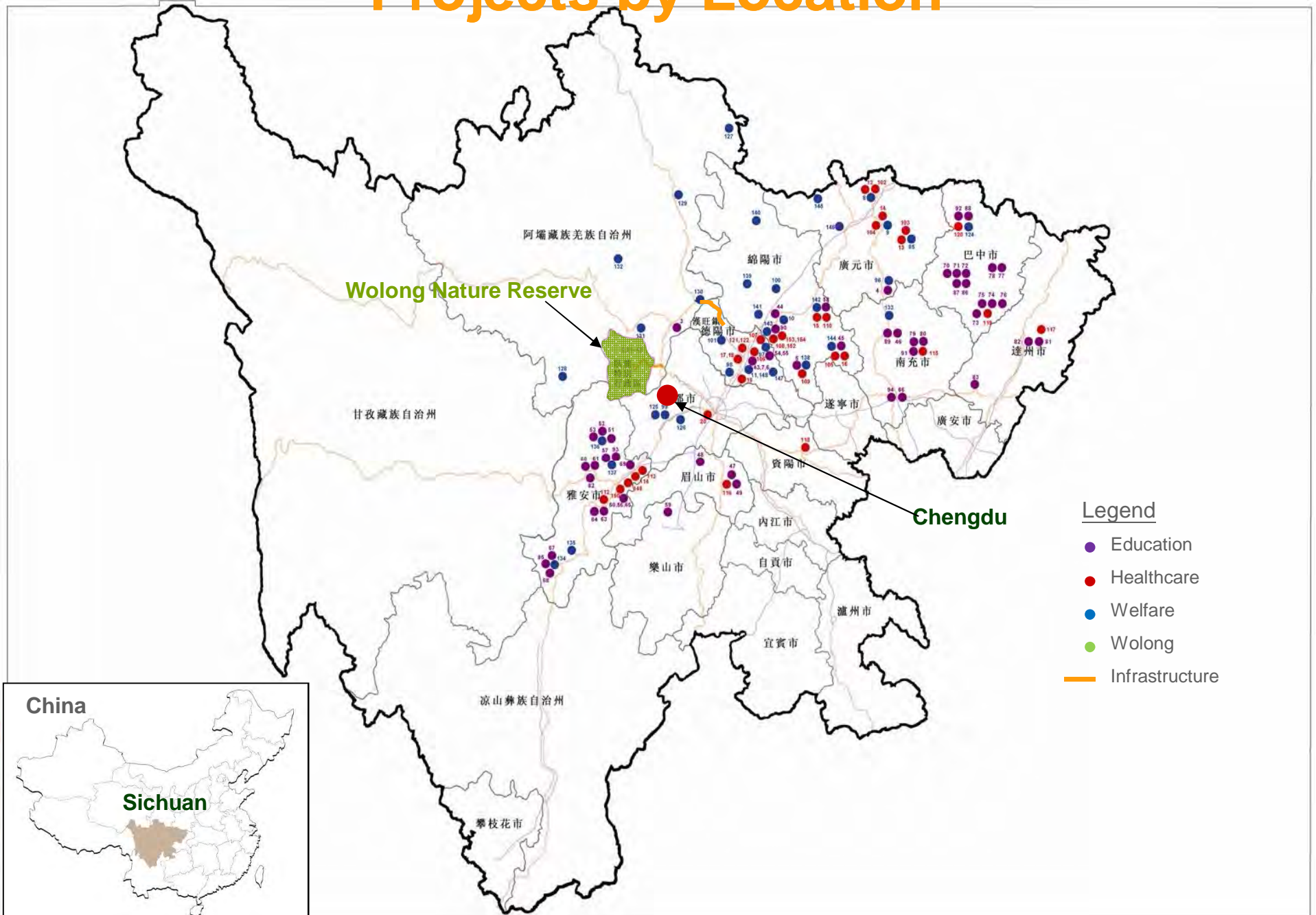
Govt-led projects



Education

Welfare & Rehabilitation

Projects by Location



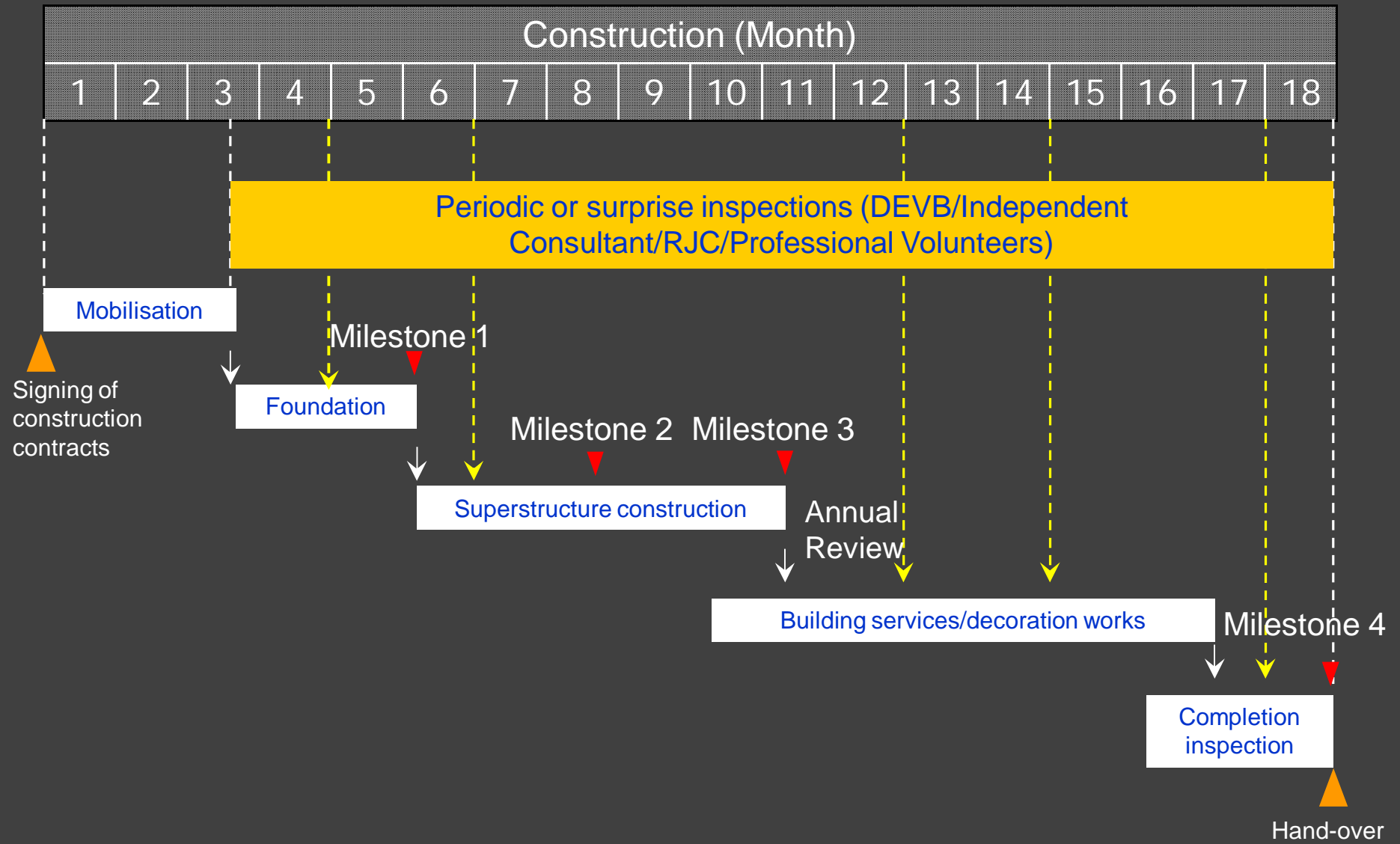
Objectives

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



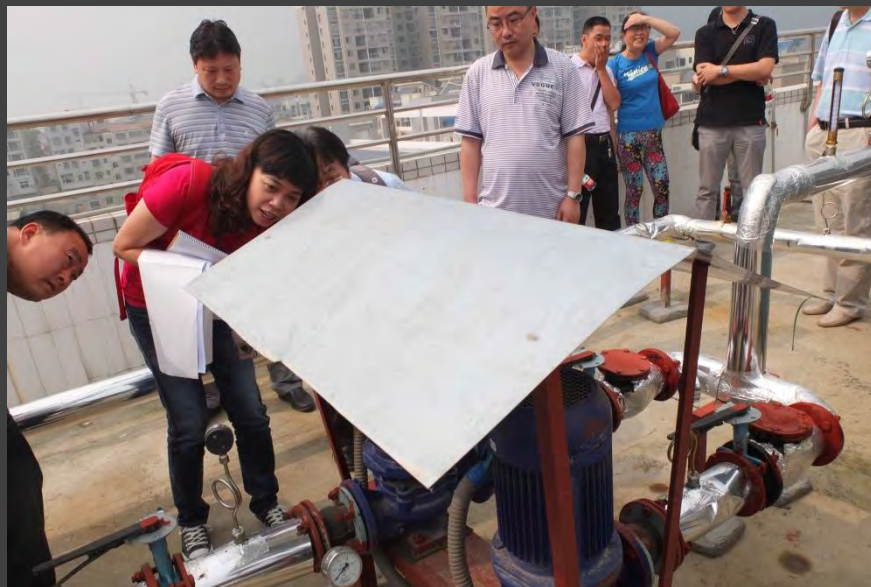
Technical Audit



- Audit checklists
- Performance rating
- Debriefing
- Reporting
- Follow-up audits



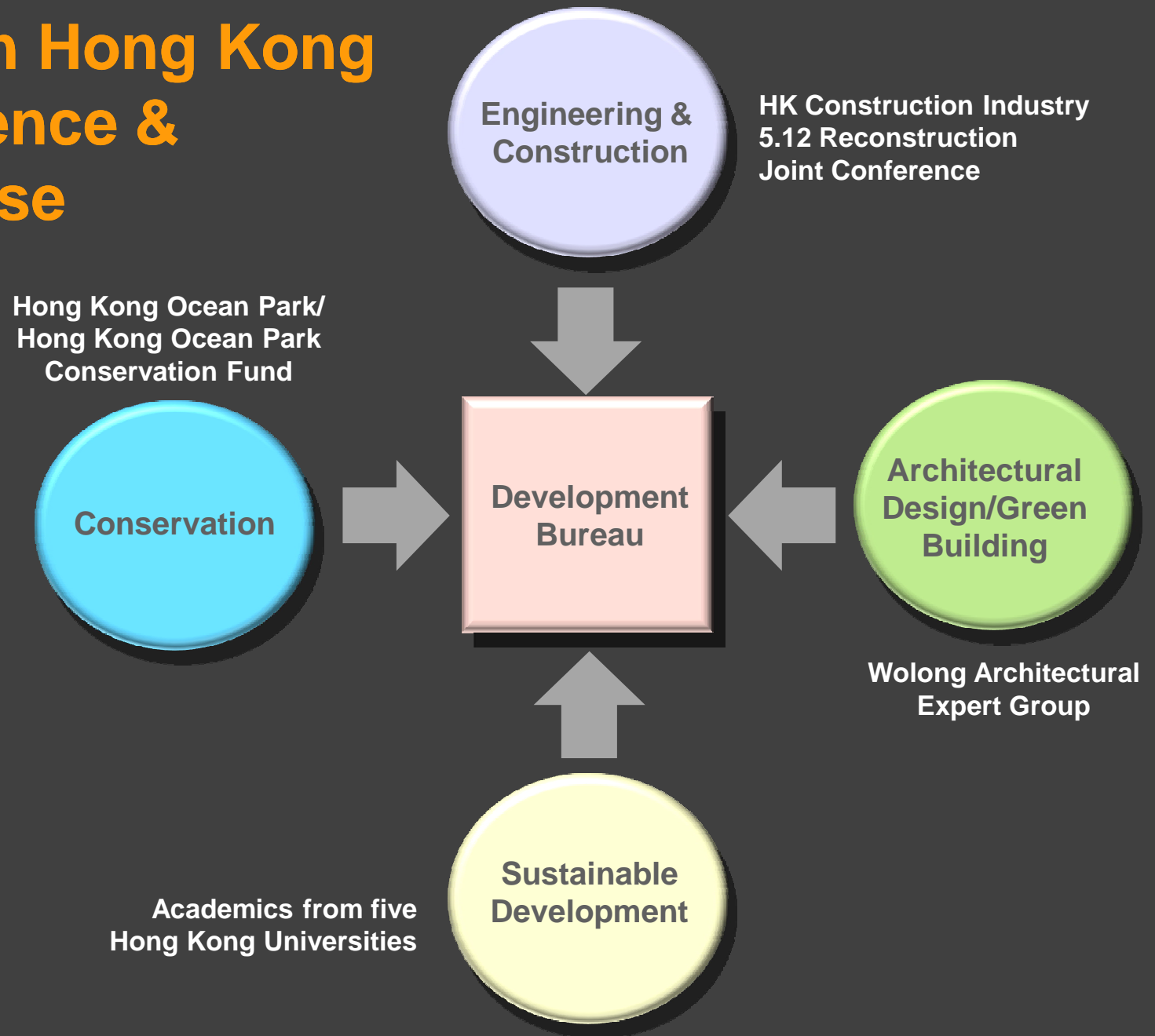
Completion Inspection



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



Bring in Hong Kong Experience & Expertise



香港海洋公園保育基金
Ocean Park Conservation Foundation
Hong Kong

關於保育基金 保育工作 資料庫

大熊貓



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最新消息

香港海洋公園保育基金跨境推動野生動物保育工作
應用海外經驗於本地鯨豚、海馬研究教育工作
協助內地全國水族館標準化



www.rjcsichuanrebuild.org

四川重建
sichuan rebuild 

5·12 RJC | 重建工程联席会议

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主页

香港建造界5.12重建工程联席会议四川灾后重建工作，以圆形图案标示，标志着不同界别、不同专业的人士同心协力，积极参与。这个圆形以简洁明快的笔触绘画，但仍有待完成，说明了为四川人民重建家园的过程既漫长又庄严。



2008©

重要告示

修订日期: 2009年5月15日

Experience Sharing & Promotion





Education Projects

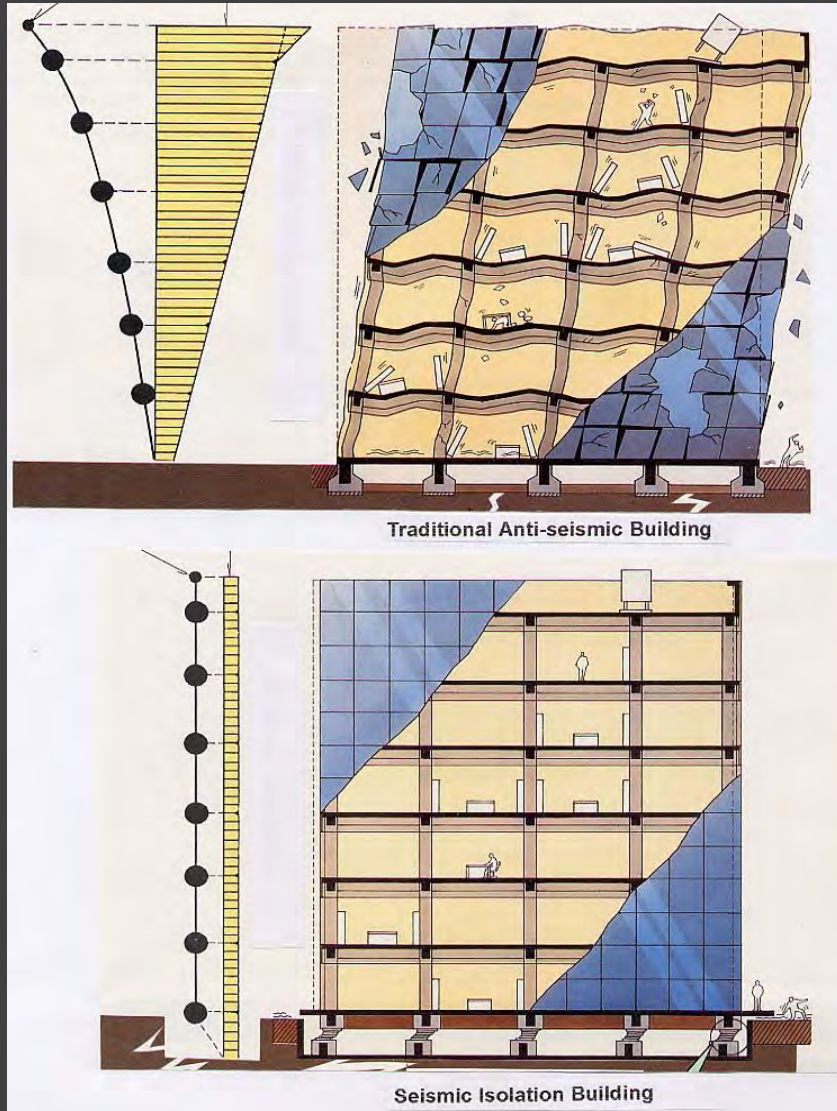
- 56 Projects
- 180 000 students



Medical Projects

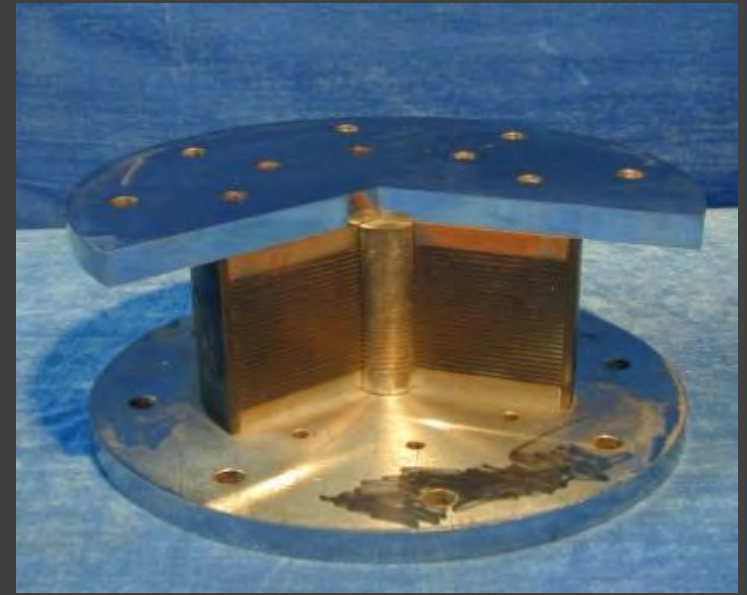
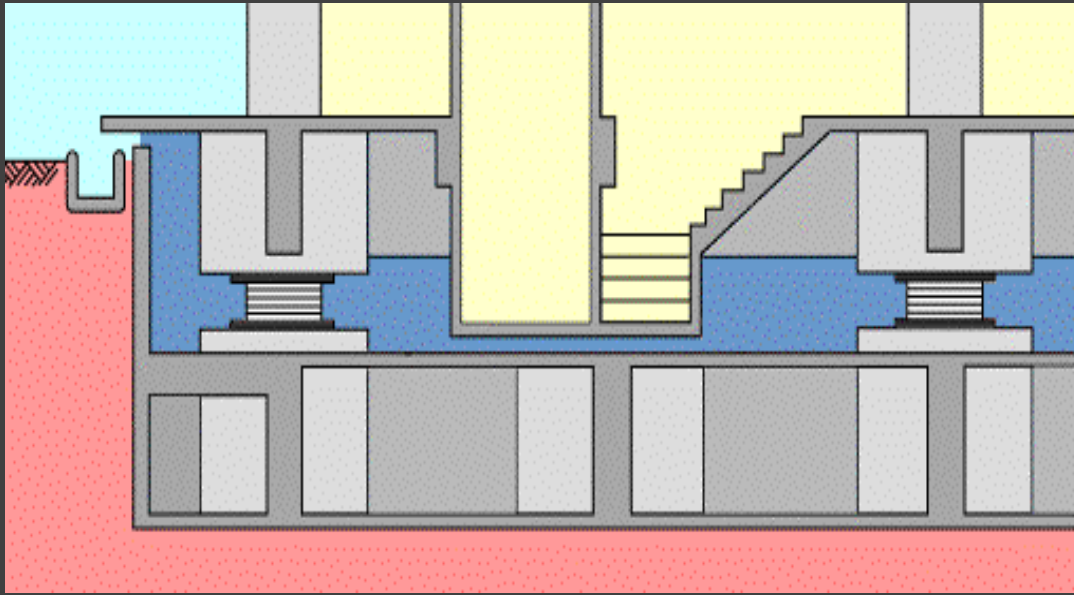
- 35 projects
- 7 000 beds

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



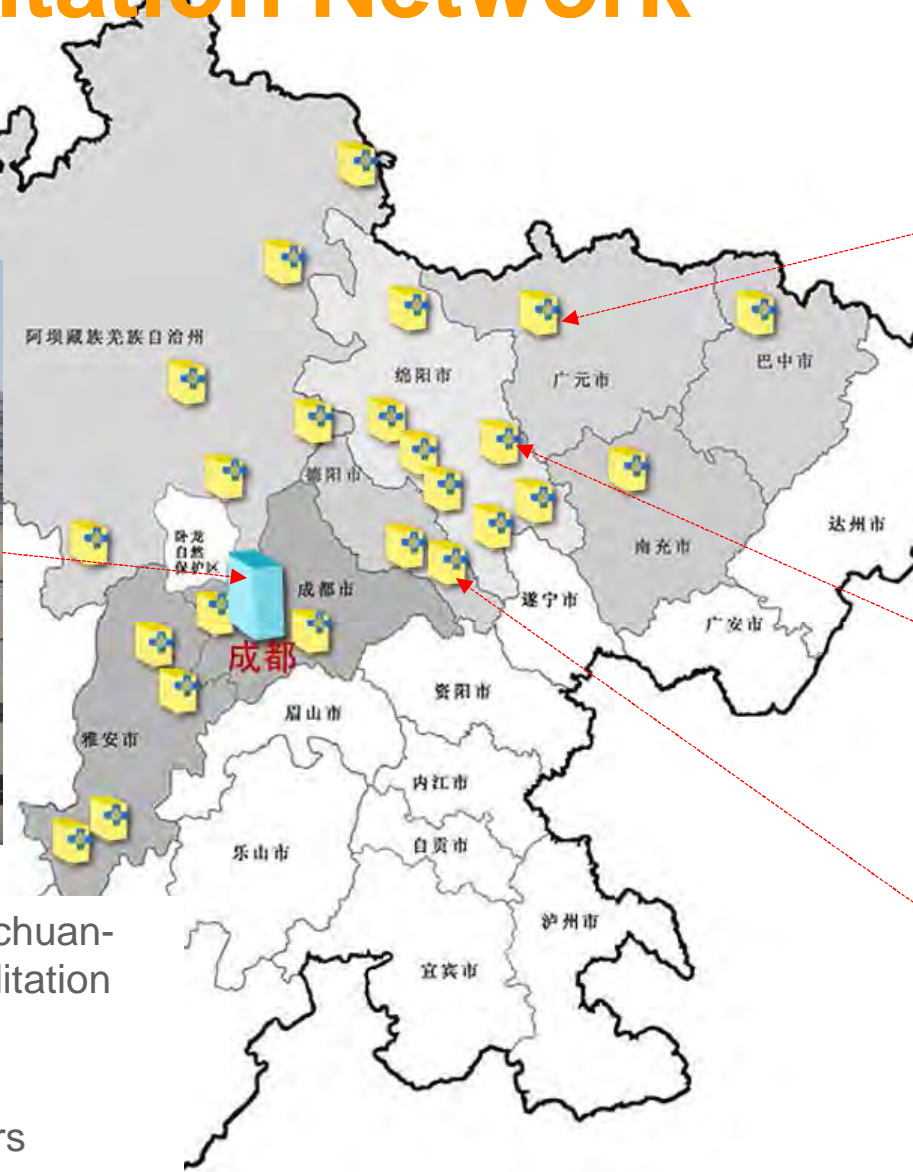




Social Welfare Projects

- 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





NGO Projects

- 16 NGOs
- 32 projects
- 500 000 people

**Provincial Road 303 &
Mianmao Road**

Road Projects

To Gansu

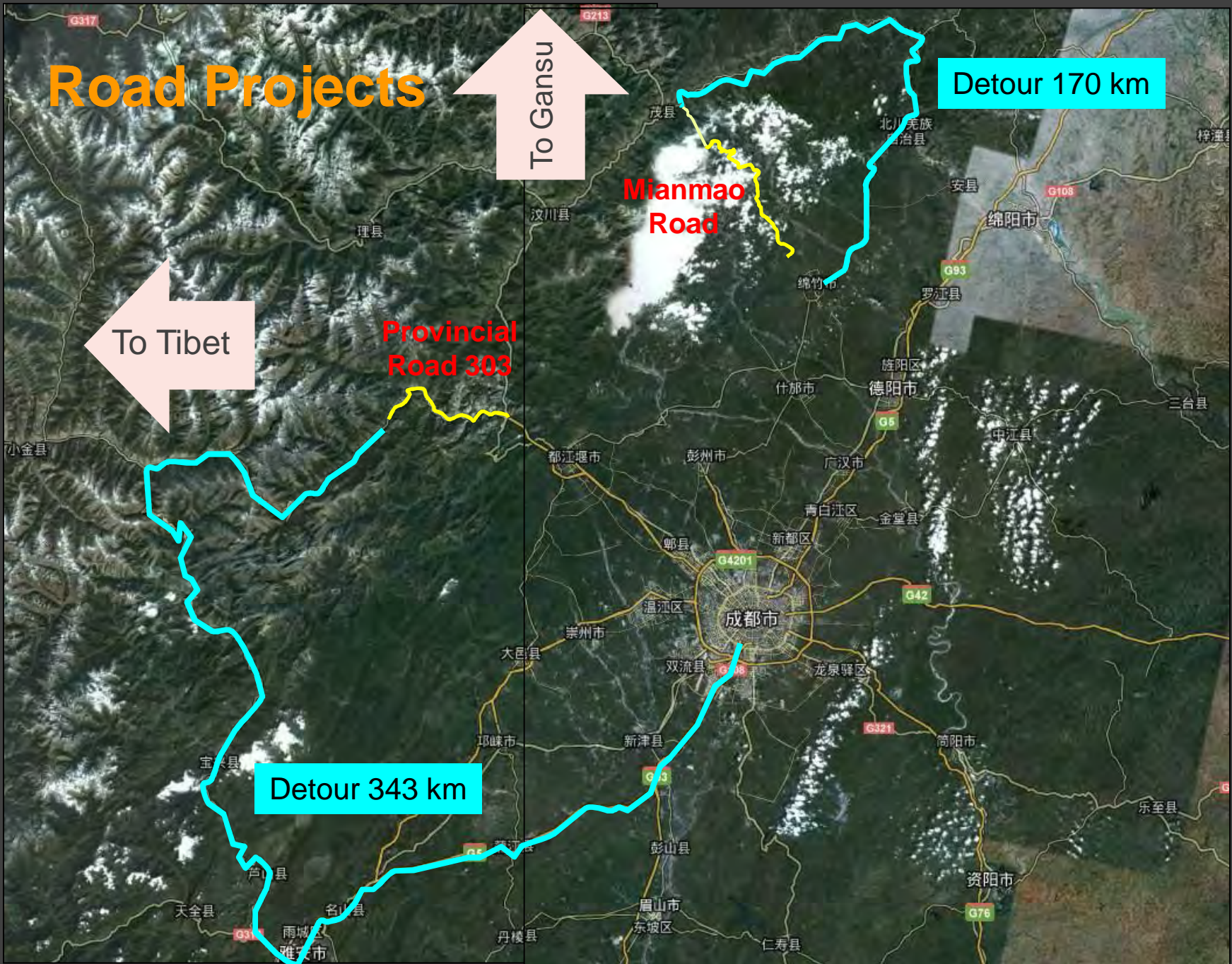
Detour 170 km

Mianmao Road

To Tibet

Provincial Road 303

Detour 343 km



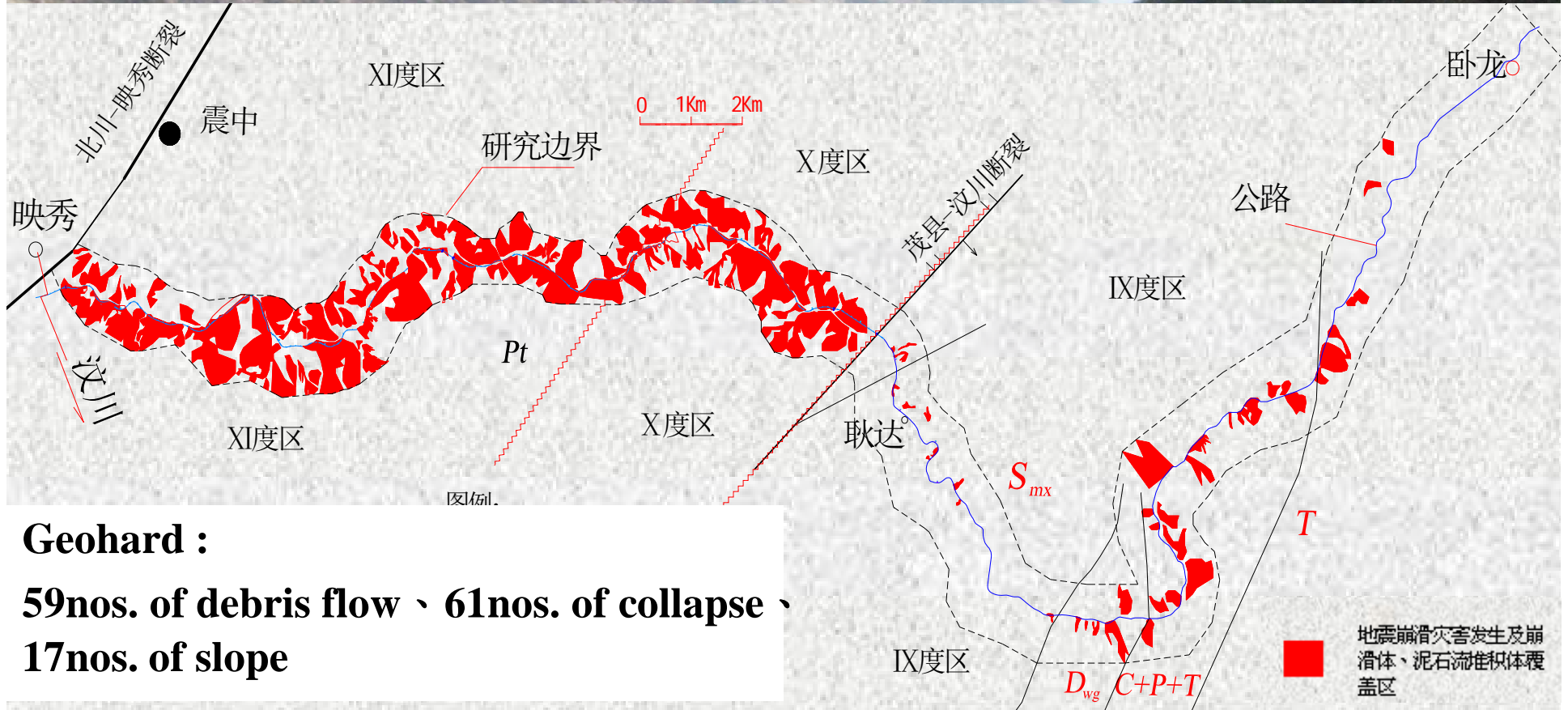
Provincial Road 303



Mianmao Road



Provincial Road 303

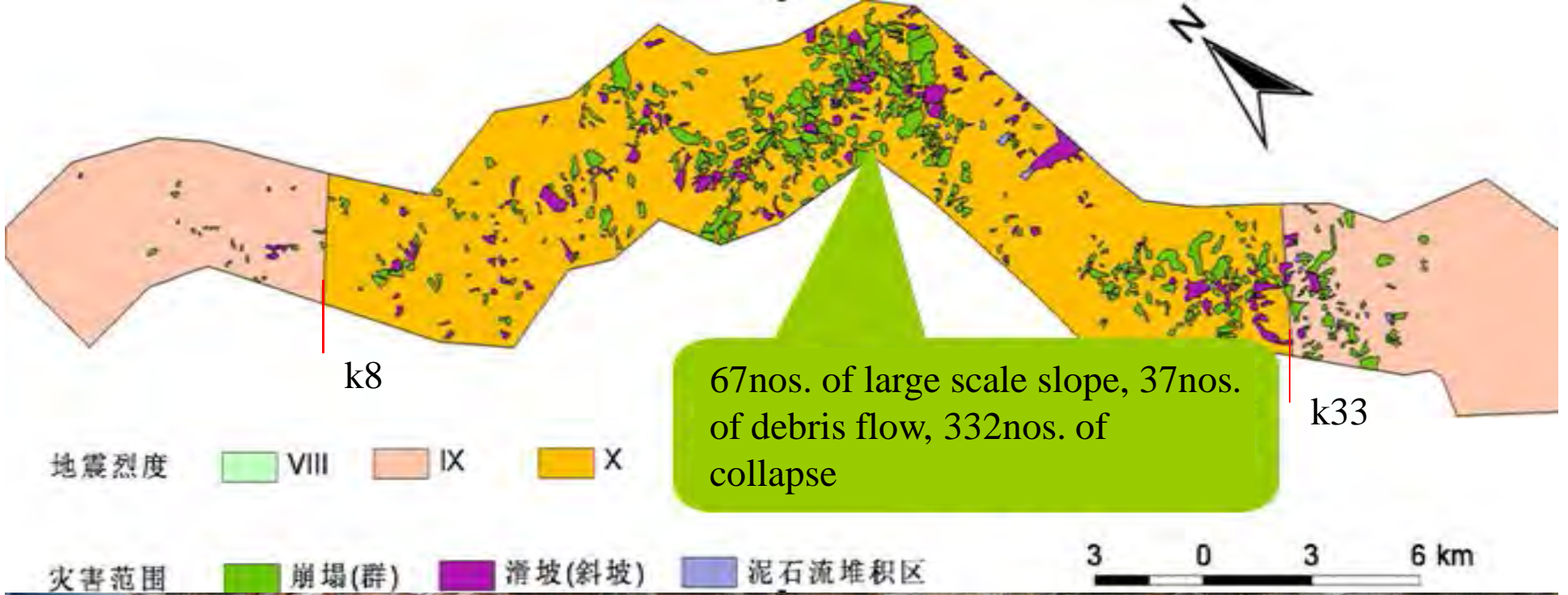


Geohard :

**59nos. of debris flow 、 61nos. of collapse 、
17nos. of slope**



Mianmao Road



Provincial Road 303 and Mianmao Road



Massive Debris Flows – 2010, 2011 & 2013

2011年7.03泥石流后



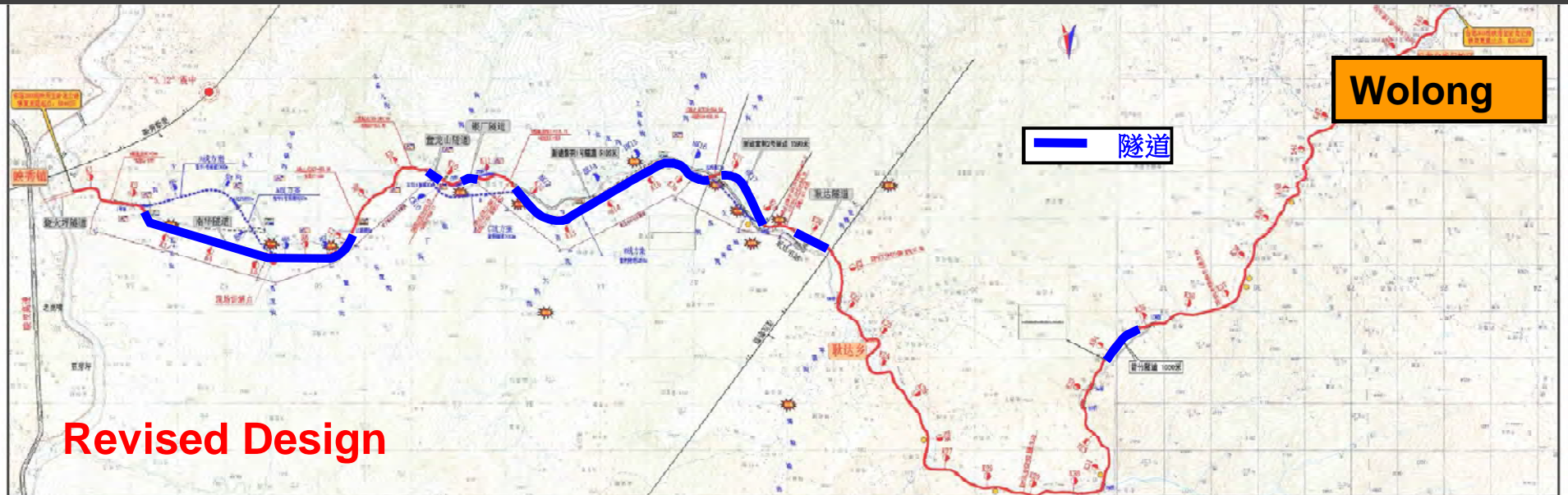
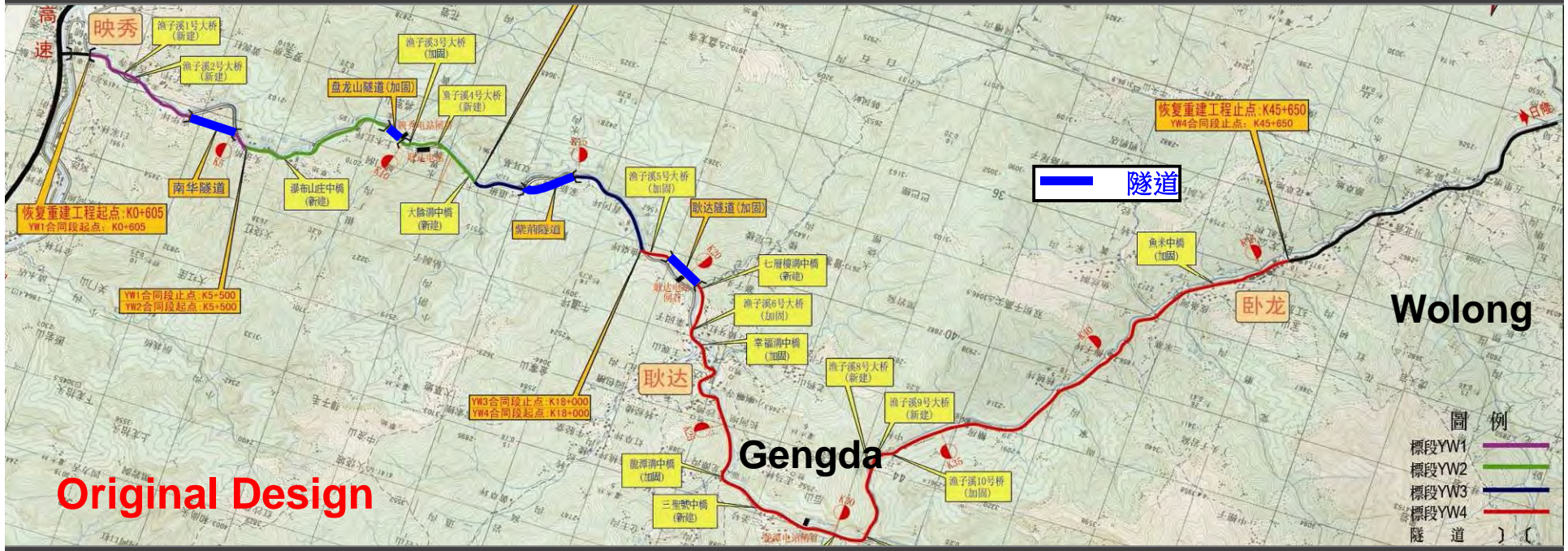
Provincial Road 303



Provincial Road 303



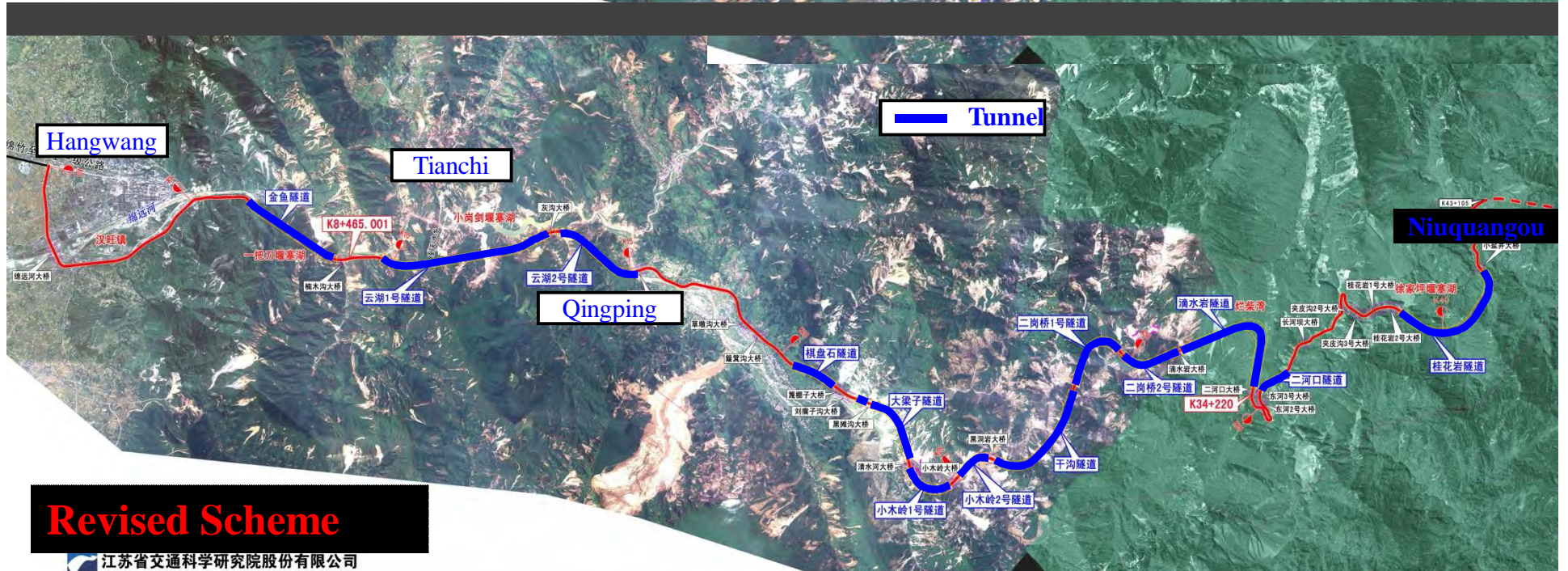
Provincial Road 303



Mianmao Road



Original Scheme



Revised Scheme

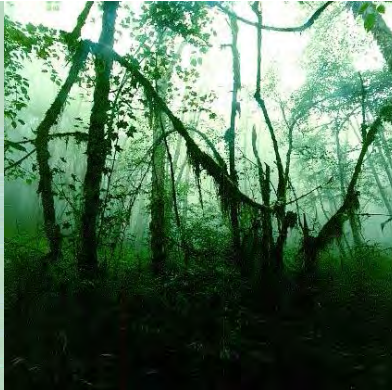
Mianmao Road



Mianmao Road



Wolong Nature Reserve



- 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

Wolong Nature Reserve

- 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

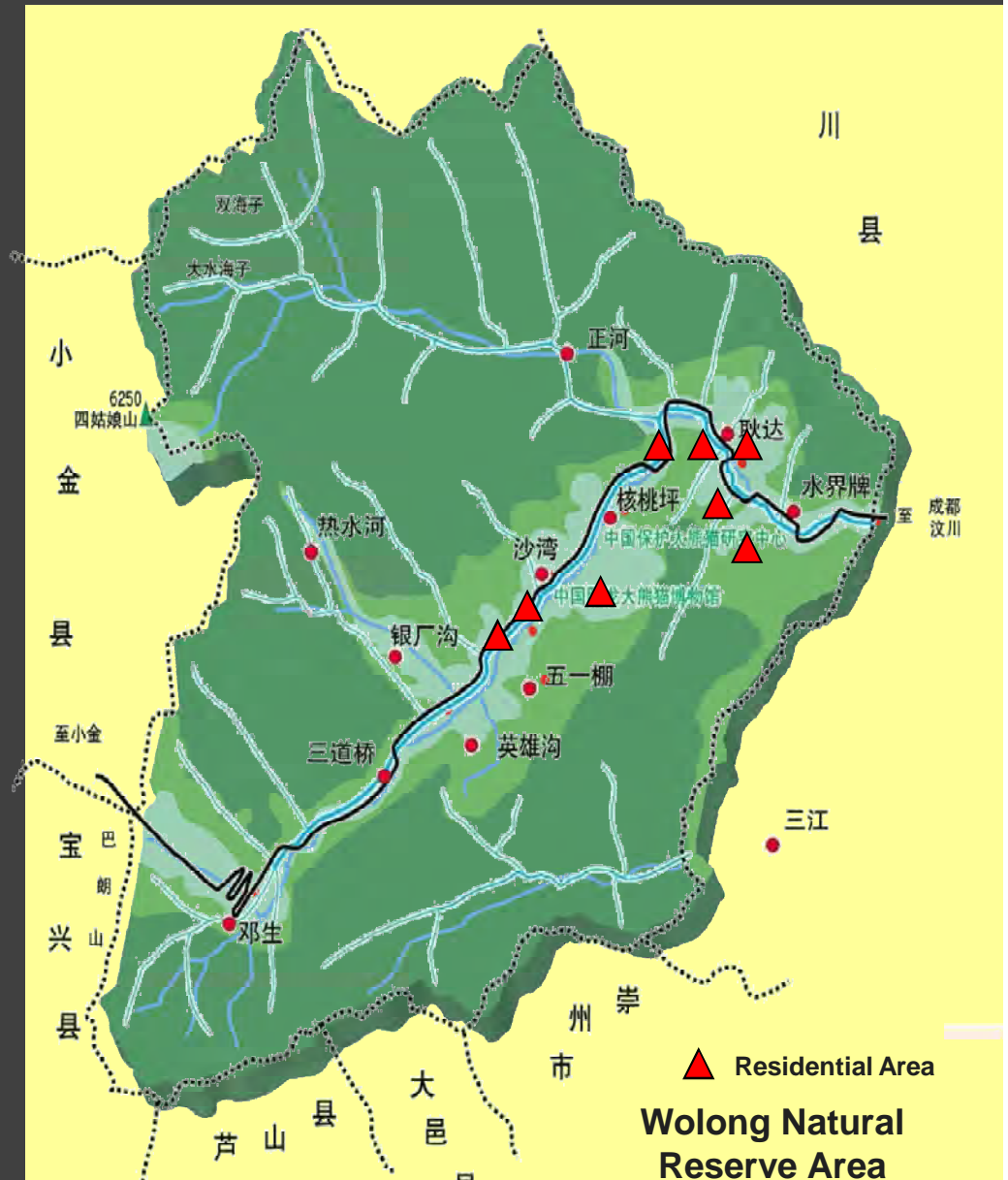


Special Administrative Region

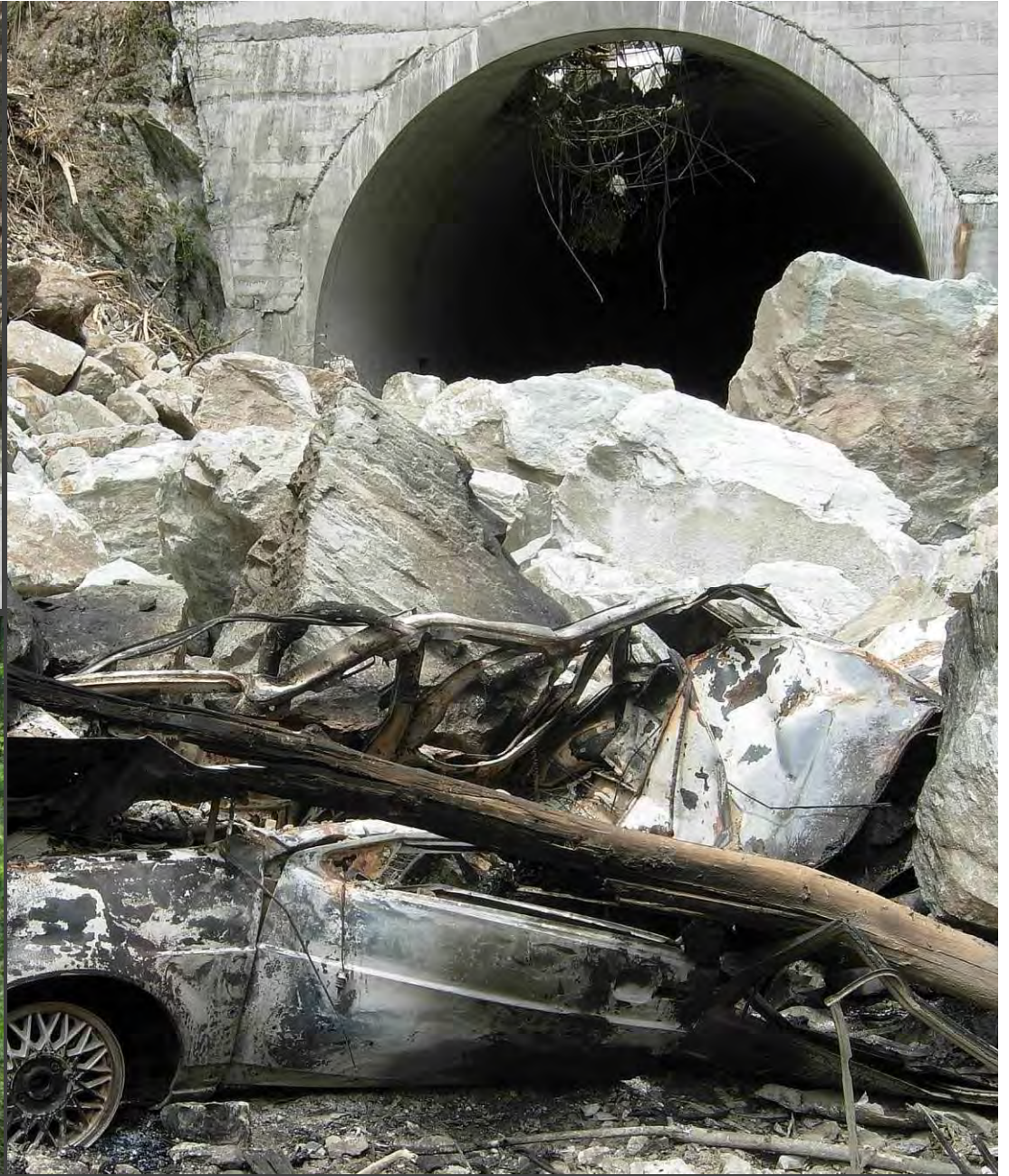
- Formed in 1983
- 1 township, 1 town and 6 villages
- Total population at around 5,000
- Four ethnic groups : Qiang, Tibetan, Hui and Han Chinese

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

1

Infrastructure and
Community Facilities

No. of
Projects

12

Project Cost
(US\$)

125.0 million

2

Conservation and
Research & Development

11

103.8 million

Total

23

228.8 million

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

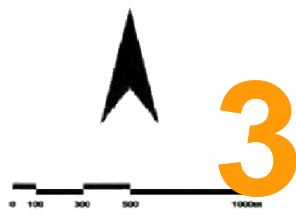
- Construction Area: 19,844 m²
- Breeding, Research and Education Zone including Veterinary hospital; research and administration facilities, tourist center and education center etc
- Giant Panda release into the wild : transition zone and training zone

Aim

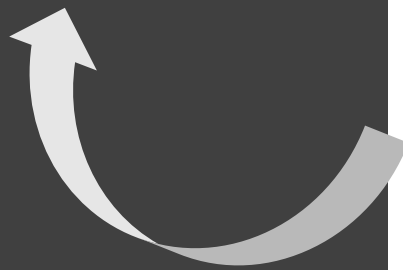
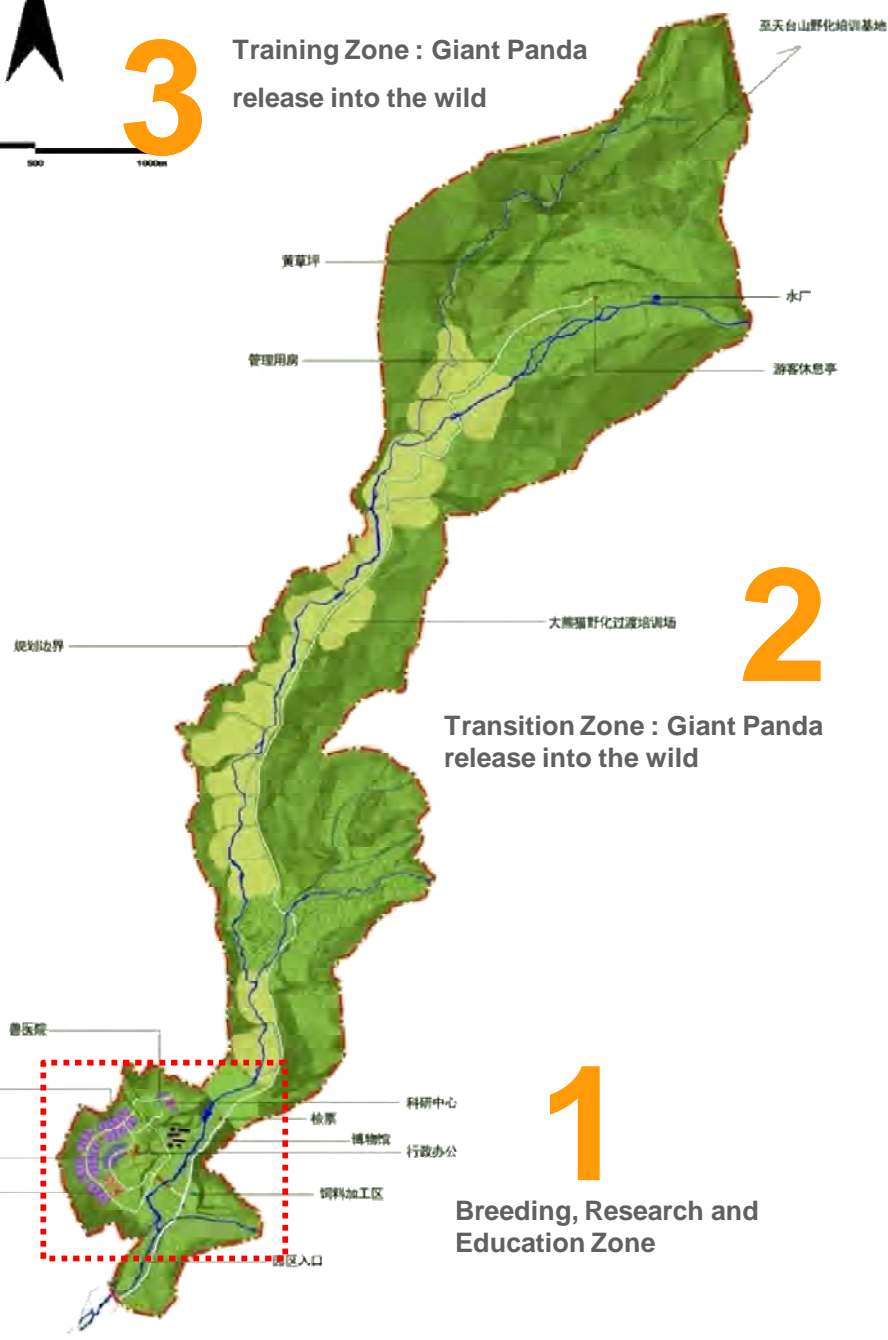
- Giant panda research and development
- Promotion and education on protection of giant pandas and conservation
- Giant panda wild reintroduction

Investment and Progress

- Overall investment: US\$ 30 million
- Anticipated completion: mid 2014



3 Training Zone : Giant Panda release into the wild





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

Master Layout - Breeding, Research and Education Zone



Aerial view – Master Layout



The China Conservation and Research Centre for Giant Panda

Research and Education Centre



The China Conservation and Research Centre for Giant Panda

Entrance Plaza



The China Conservation and Research Centre for Giant Panda

Office and Research Building



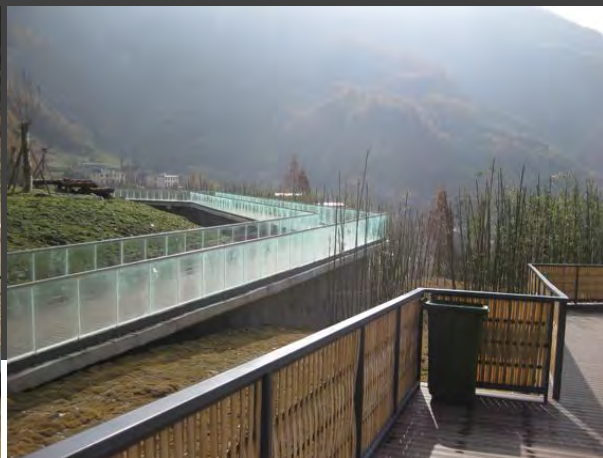
Veterinary Hospital & Quarantine Building



Adult Panda Enclosure and Playground



Panda Cub Enclosure

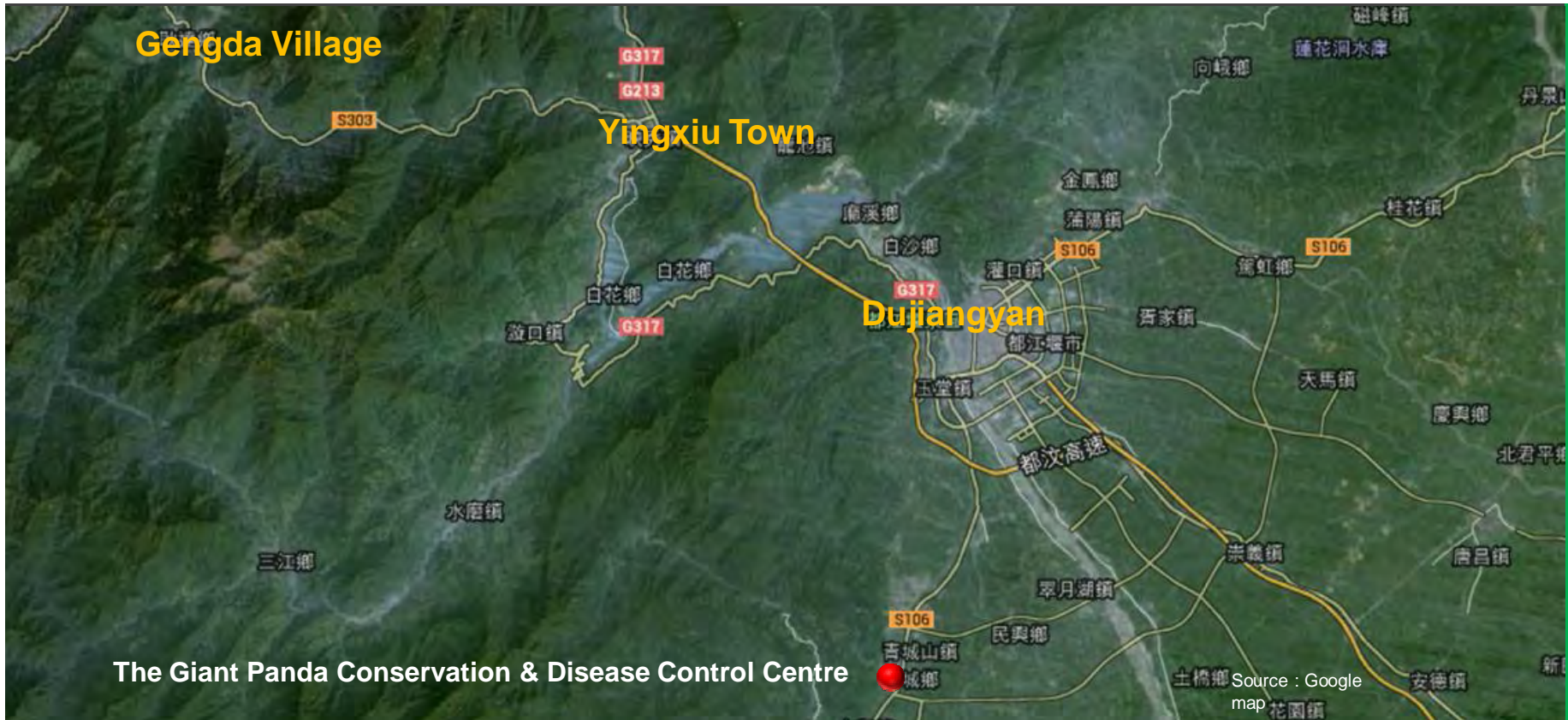


The China Conservation and Research Centre for Giant Panda



The China Conservation and Research Centre for Giant Panda

The Giant Panda Conservation & Disease Control Centre



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

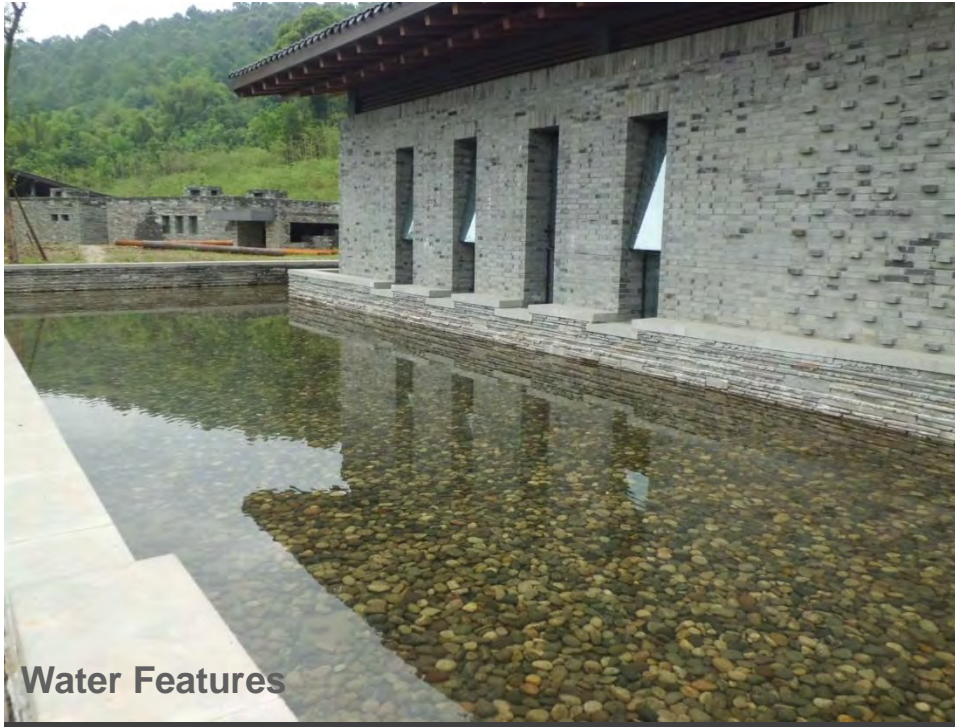
1. Tourist Centre
2. Veterinary Hospital
3. Disease Control and Research Centre
4. Administration Building
5. Quarantine and Monitoring Building
6. Activity Centre
7. Staff Quarters
8. Panda Enclosures



Aerial View – Master Layout



Tourist Centre



Water Features



Entrance Plaza



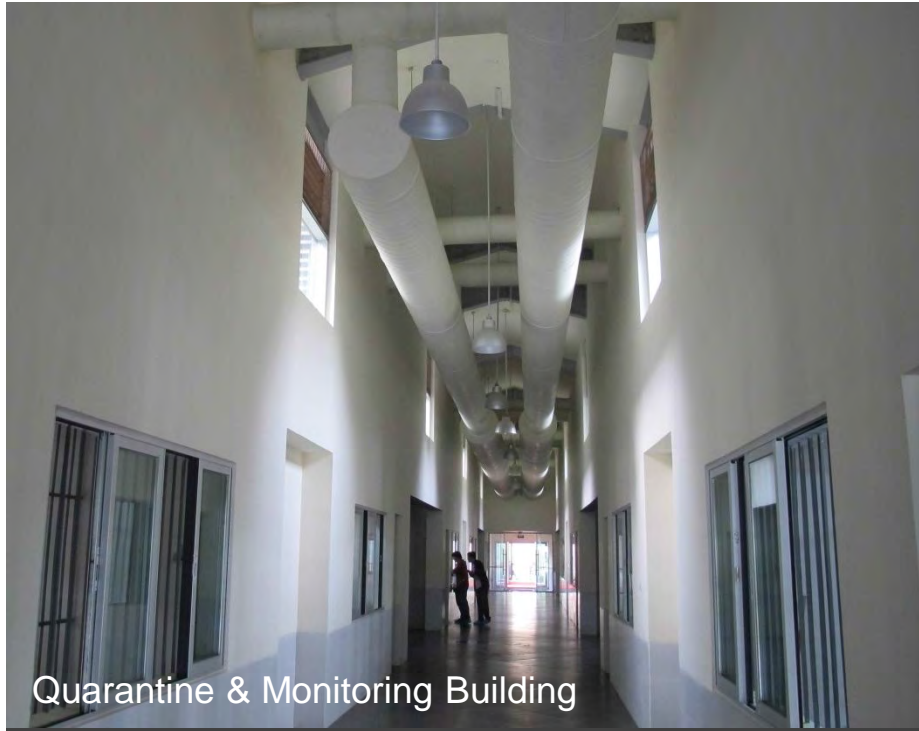
Canteen



Education Centre



Quarantine and Monitoring Building



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

Veterinary Hospital



Disease Control and Research Centre



Administration Building

The Giant Panda Conservation & Disease Control Centre

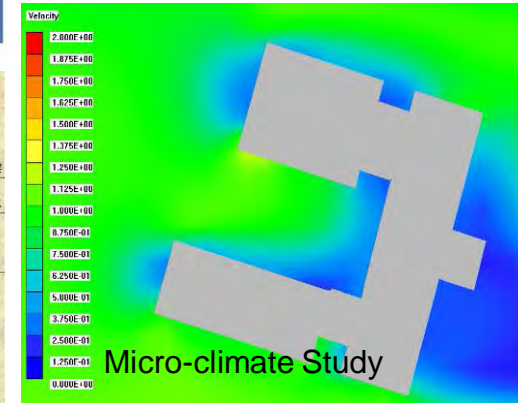
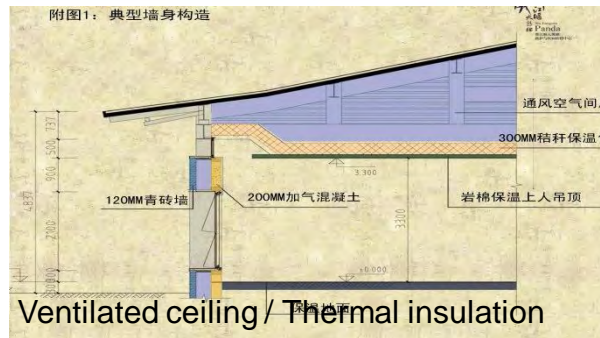
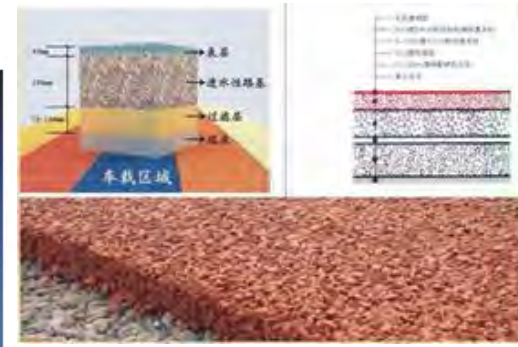
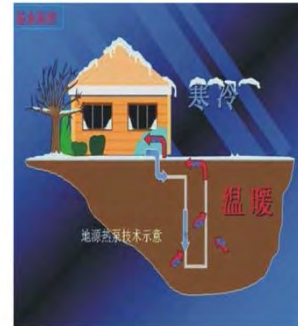
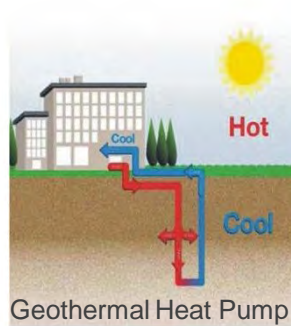
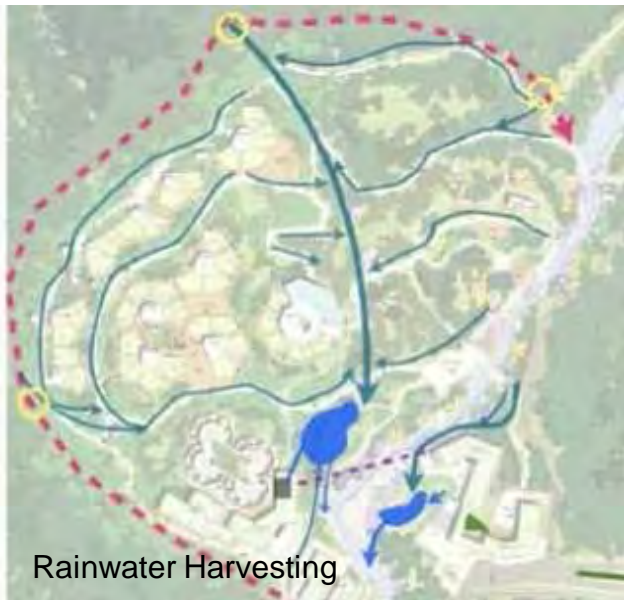
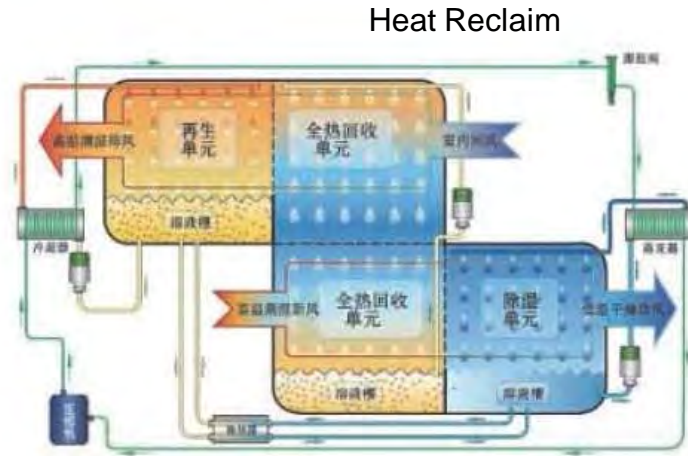


Staff Quarters & Activity Center

The Giant Panda Conservation & Disease Control Centre

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



Giant Panda Wildlife Observation Stations

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



Dengsheng Conservation Station

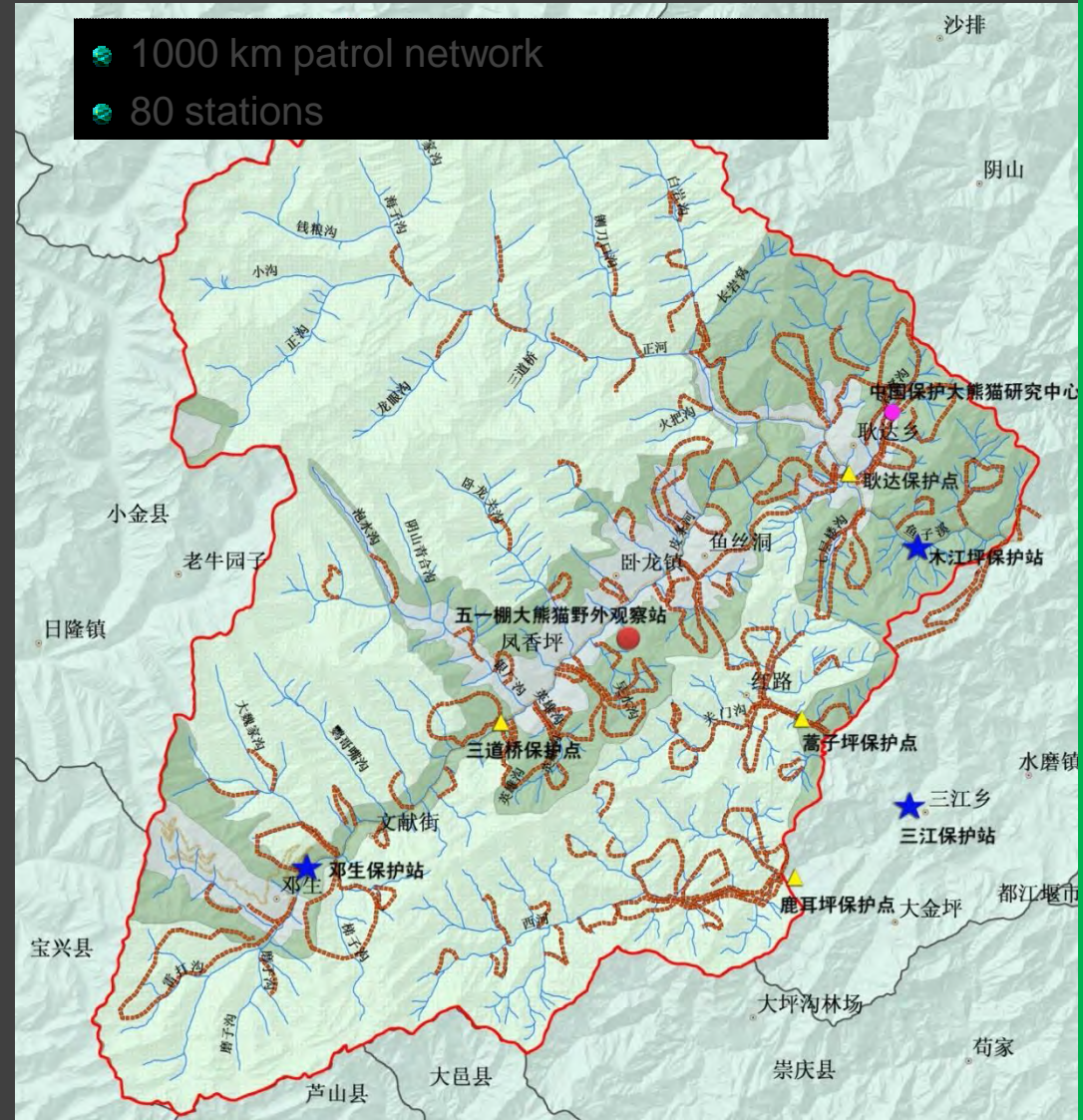


Balang Mountain Spot



Sanjiang Conservation Station

Monitoring Stations / Patrol Network



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

4

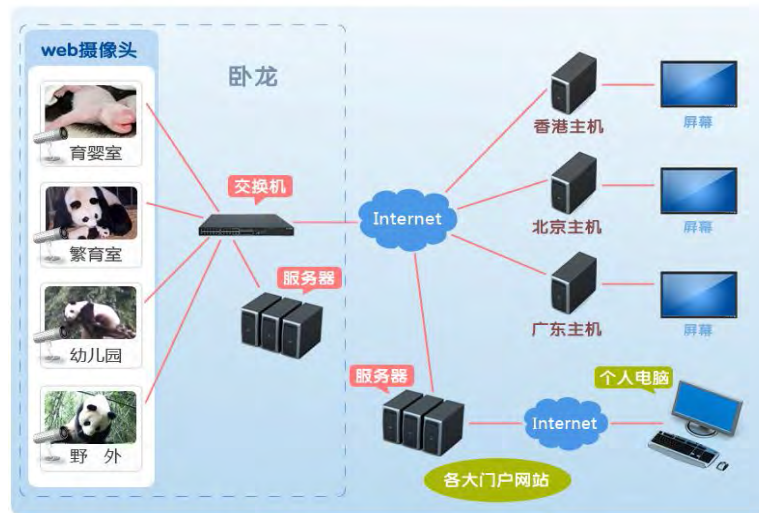
Administration & Security Control

- Electronic Management System
- Security System

5

Education and Publicity

- Experience centre
- Education Platform
- Multimedia
- Wolong Network



2

Communication Applications

- Video conference
- Network monitoring
- Electronic mail
- Network audio system

1

Communication Infrastructure

- Wired Network
- Wireless Network
- Internet
- Network Management System

Wolong Primary School / Gengda School

Infrastructure and Community Facilities

Gengda School



Wolong Primary School



Restoration of Cultural Heritage



Healthcare and Social Welfare Facilities



Wolong Hospital



Gendga Healthcare Centre

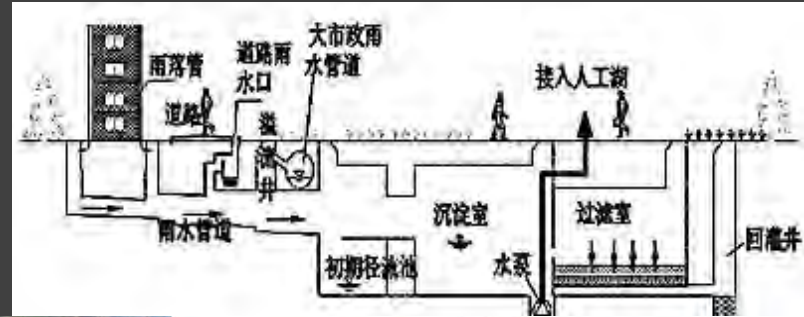


Wolong Social Welfare Centre

Power Supply, Water Supply and Drainage Systems



Electrical Transformer



Hydro Power Water Catchment



Settlement Tank

Administration and Staff Facilities

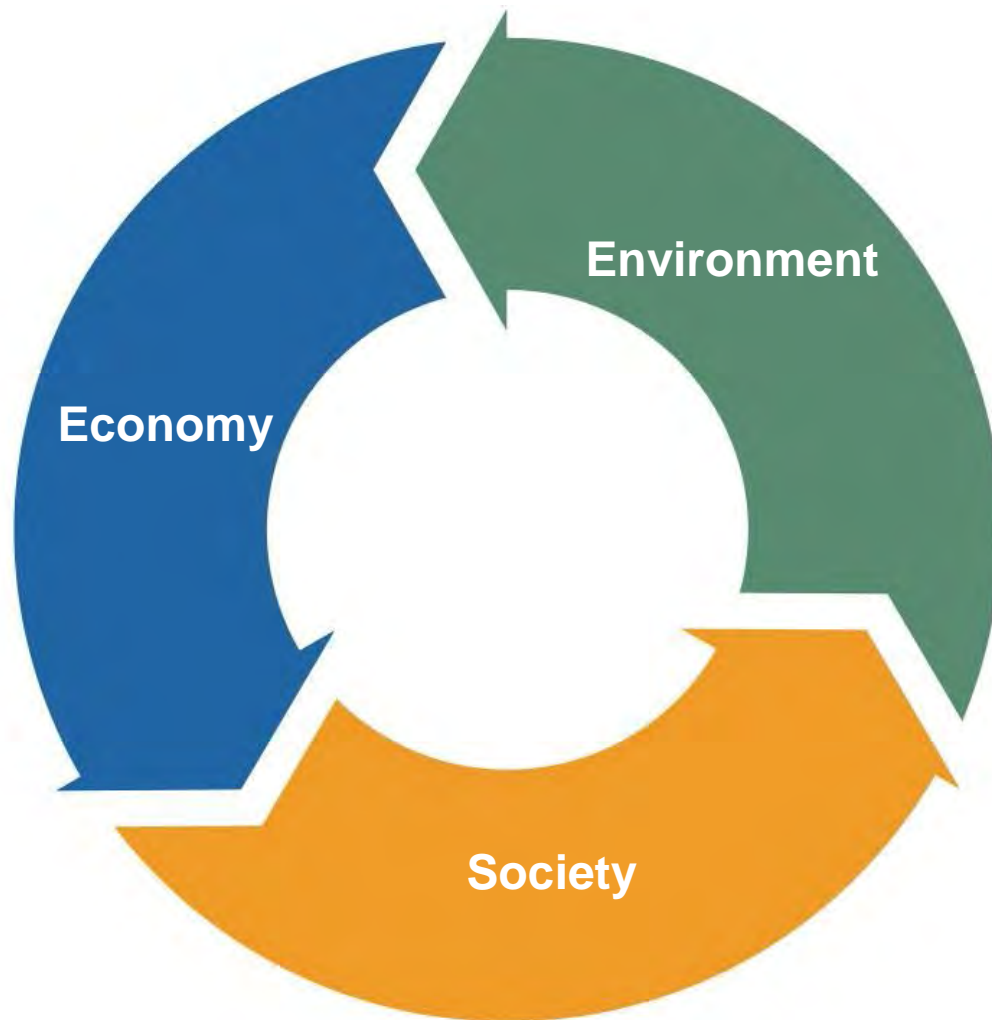


Sustainable Development of Wolong

- 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

A vibrant rainbow arches across a bright blue sky filled with wispy white clouds. Below the sky, a lush green field stretches across the foreground, with a line of trees visible on the horizon. The overall scene is bright and cheerful.

Thank You