



“We cannot stop natural disasters but we can arm ourselves with knowledge: so many lives wouldn’t have to be lost if there was enough disaster preparedness.”

Petra Nemcova

Disaster Management & Reconstruction Sector

The establishment of the Disaster Management and Reconstruction Division which was initially named as the Earthquake Rehabilitation and Reconstruction Division was necessitated after an intense earthquake devastated major parts of the Khyber Pakhtunkhwa (KPK) Province and Azad Jammu and Kashmir in October 2005. At the very outset, NESPAK formed a small team of professionals to provide consultancy services for the rehabilitation and reconstruction projects in the calamity-hit areas. Owing to the expansion in the magnitude and scope of the projects, the staff swelled and now the number of employees serving the Disaster Management and Reconstruction (DM&R) Sector is around 400.

NESPAK has undertaken a total of 155 projects with 5,000 plus sub-projects costing Rs. 380 billion in the Disaster Management and Reconstruction Sector. As many as 140 projects have been completed while 15 are in the construction stage.

NESPAK's role in the reconstruction and rehabilitation of the disaster-hit areas has been very constructive and effective. The Company has been rendering the consultancy services on the projects related to all 12 development sectors including housing, healthcare, education, roads, governance, social protection, livelihood, environment, water, sanitation and transport.

NESPAK provides finest services in all aspects of pre-disaster preparedness and post-disaster management and reconstruction scenarios. The Company specialises in safer development planning, geo-technical and seismic hazard studies, seismic resistant architectural and structural designing, GIS-based project monitoring, construction management and fast, innovative and energy efficient construction technologies.

The jewel in the crown of the DM&R Sector is the largest project in NESPAK's history, i.e., the Reconstruction and Rehabilitation in the Earthquake Affected Areas costing Rs. 200 billion.

NESPAK has not only dealt with the earthquake reconstruction projects but also with flood damages rehabilitation jobs. NESPAK has recently been handling the flood management projects awarded in the wake of 2010 floods in the road and irrigation sectors.

SCOPE OF SERVICES

The resources and depth acquired while performing as General Consultants to the Earthquake Reconstruction and Rehabilitation Authority (ERRA) allow NESPAK to offer pre-and-post-disaster services under a limitless range of possibilities which are tailored to fit specific needs of a broad range of clientele.

Pre-Disaster Services: Services related to multi-hazard vulnerability for various disaster scenarios, safer land use planning using Geographical Information System (GIS) for analysis and decision making. Solutions and guidelines related to safer building construction, contingency planning and socio-economic and institutional capacity building are also offered to enhance resilience of urban and rural areas.

Post-Disaster Services: Damage assessment surveys, strategic and contingency planning, multi-phased reconstruction and rehabilitation programmes for sectoral redevelopment, structural evaluation and condition surveys of damaged buildings, seismic retrofitting of structures, identification of safe havens for the affected people, Resettlement Action Plans, geo-hazard surveys and GIS/IT based solutions.

- **Multi-Hazard Vulnerability and Geological Hazard Assessment:** Hazard-based land use management, geotechnical hazard zoning, damage intensity zoning, seismic hazard macrozoning/ microzoning studies, geotectonic/ neotectonic studies, lithostructural and lithostratigraphic mapping, dynamic/ geophysical terrain evaluation, vulnerability capacity analysis, hydro-meteorological/ hydrological disaster studies and GIS-based disaster risk reduction analysis.



- **Innovative and Fast Track Construction Technologies:** NESPAK has introduced the culture of innovative, energy-efficient fast track construction technologies consistent with standardised practice for the earthquake-prone areas of Pakistan. Consultancy services for the construction of pre-engineered light gauge/cold formed galvanised steel structures, structural concrete insulated panels, seismic retrofitting, modules for earthquake resilient conventional construction, reinforced concrete special moment resisting frame structures, load bearing confined masonry structures and Dhajji and Bhattar Technologies.

Urban/Regional Planning and

Development: Working collaboratively in focussed interdisciplinary teams, we define and develop ideas, concepts and strategies that address great diversity of safe land use planning and urban design challenges facing post-hazard situations. The collaborative working method enables our clients to engage with and benefit from multiple points of view. Some of our principal areas of practice elucidating our approach towards work are strategic planning and policy making, spatial/physical planning, urban and regional development projects, safer land use planning, transportation planning, tourism and rural development planning.

Community Mobilisation: Seasoned NESPAK professionals apply a meticulous range of techniques to give tangible expression to social values including interactive community meetings, focus group discussions, visual simulations, stakeholder interviews, census and sample surveys.

Human Resource Development and

Capacity Building: NESPAK offers services for the development of human resource and trainings and workshops for capacity building of professionals in the disaster risk management and mitigation of potential hazards.

EXPERIENCE

Buildings and Aseismic Structural Design:

NESPAK has been handling seismic resistant structural designs using conventional, innovative fast construction technologies and supervision of more than 7,000 housing, educational, health and governance and allied sector facilities under the Reconstruction and Rehabilitation in Earthquake Affected Areas Project through which consultancy services have been rendered under extreme emergency situation in an area spread over 30,000 sqkm.

Design Review and Vetting: Services for design review and vetting of buildings submitted by development partners and sponsors including the Asian Development Bank, Saudi Fund for Development, Islamic Development Bank, United Nations, Red Cross, USAID, CDM Smith, UN Habitat, e.t.c. Structural design vetting for around 1,500 facilities of more than 135 International/ Local Non-Governmental Organisations (NGOs) has been carried out by NESPAK.

Road Infrastructure: Detailed design and construction supervision of 750 km roads and 9 bridges worth Rs. 10 billion in the KPK Province and AJ&K earthquake-hit areas have been undertaken by NESPAK.

Housing: Around 600,000 houses have been reconstructed in KPK and AJ&K under the owner driven Rural Housing Programme with assisted and inspected construction as per designs prepared by NESPAK. Training Manuals and Compliance Catalogues were also prepared. This is rated as the best housing reconstruction programme.

Seismic Hazard Microzonation: Seismic hazard microzonation studies of four major towns of Bagh, Rawalakot, Muzaffarabad in AJ&K and Balakot in the KPK have been carried out. Moreover, seismic hazard microzonation of Quetta, Murree, remote areas of Shoghore Valley, District Chitral and Immit Area of Gilgit-Baltistan to build community resilience against earthquakes, floods, landslides, avalanches and other potential disasters have been undertaken. Seismic hazard and geo-technical studies



were also carried out to finalise the safest location for around 5,000 buildings in the earthquake-hit areas. NESPAK has provided these services on a large number of other projects as well.

Urban/Regional Planning and

Development: Dedicated services for quake-hit towns of Muzaffarabad, Bagh, Rawalakot and New Balakot Town including physical land-use and socioeconomic surveys, master planning and detailed infrastructural designing including water supply, sewerage, sanitation, drainage, electricity, transportation and building designs incorporating disaster risk reduction considerations. NESPAK has also prepared Poonch District Tourism Master Plan and peripheral development and improvement plans for the Old Balakot Town. Currently, urban development works worth Rs. 35 billion under China's Preferential Buyer's Credit are being executed in Muzaffarabad, Bagh and Rawalakot cities. NESPAK scope of services includes design review and construction supervision of buildings and infrastructure works in collaboration with the Chinese consultants and contractors.



Earthquake disaster 2005



Flood Management and Forecasting/

Warning Systems: As many as 78 flood management projects have been undertaken, involving design of about 1,006 flood control schemes and construction supervision of more than 175 km of embankments.

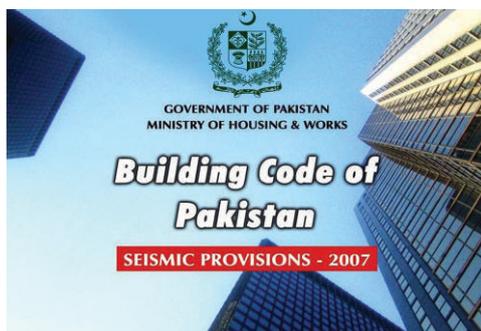


Attabad landslide 2010



Building Code of Pakistan:

NESPAK prepared the Revised Seismic Provisions – 2007 of the Building Code of Pakistan for the Ministry of Housing and Works, Islamabad in the wake of devastating earthquake of October 08, 2005. This mammoth task was carried out in coordination with the Expert Committees of Pakistan's Ministry of Housing and Works, the Pakistan Engineering Council, the International Code Council and the American Concrete Institute.

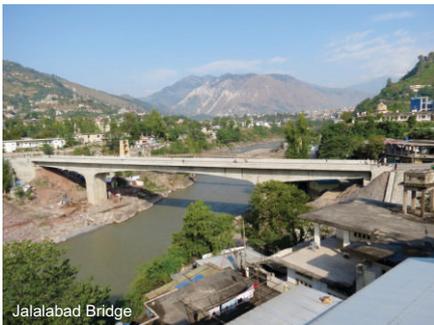




Ring Road Section-I, Bagh



Prime Minister House, Muzaffarabad

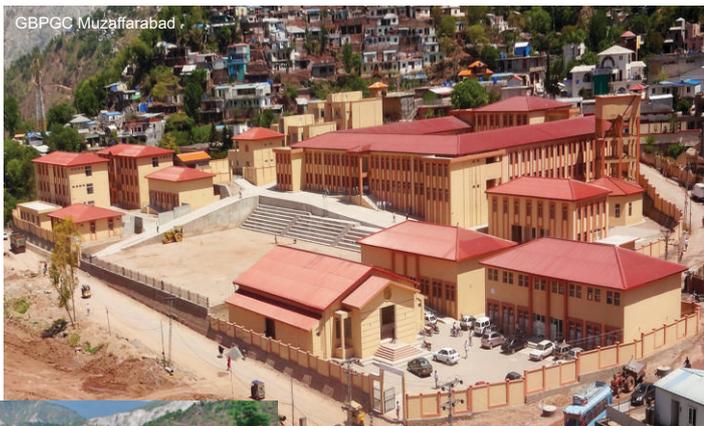


Jalalabad Bridge

Reconstruction and Rehabilitation of Earthquake-affected Areas

NESPAK is involved in providing consultancy services for various projects under the mega venture “Reconstruction and Rehabilitation of Earthquake Affected Areas.” The reconstruction projects were started in the wake of the October 2005 earthquake which devastated a large part of Pakistan. The services include project planning, designing, tender documentation and construction supervision for the projects initiated in the earthquake-affected areas of Azad Jammu and Kashmir (AJ&K) and Khyber Pakhtunkhwa (KPK). As many as

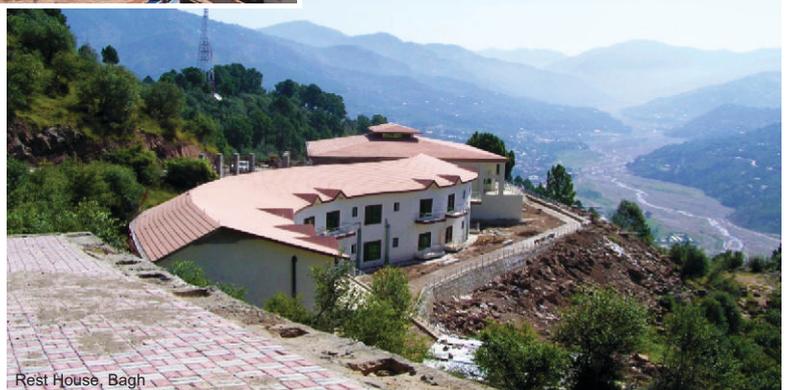
150 sub-projects have seen light of the day under the ERRP, putting the number of completed facilities at 1,746 in health, education, governance and road sectors as well as Kuwait-funded colleges. The Rs. 200 billion mega ERRP was awarded by the Earthquake Reconstruction and Rehabilitation Authority. The scope of services for this gigantic project includes master planning, tender documentation, detailed design, design review and construction for this biggest project in the history of NESPAK. Under the Rs. 26 billion Chinese-funded Urban Development Program—a major part of the ERRP —, 113 facilities have been completed in Muzaffarabad, Bagh and Rawalakot in the AJ&K.



GBPGC Muzaffarabad



Makri Treatment Plant



Rest House, Bagh

Humanitarian Response Facilities at Peshawar, Hyderabad



NESPAK supervised the construction of Humanitarian Response Facilities at Peshawar and Hyderabad for the United Nations World Food Program (UN-WFP) and Pakistan National Disaster Management Authority. NESPAK was applauded for timely completion, efficient construction and contract management of the projects it had won in an open competition.

UAE-Pakistan Assistance Program



The UAE-Pakistan Assistance Program (UPAP) Building Works Project in the Khyber Pakhtunkhwa (KPK) Province and the Federally Administered Tribal Areas (FATA) was the highlight of the projects acquired by NESPAK during the year 2011. The project costing Rs. 2 billion was awarded by the Government of the United Arab Emirates (UAE) and the Engineering-in-Chief Pakistan Army. NESPAK scope of services included project planning, detailed design, tender documentation and construction supervision for 12 healthcare and educational buildings in the disaster-hit areas of the KPK and FATA.



ADB-funded Earthquake Emergency Assistance Project, AJ&K and KPK

NESPAK provided consultancy services to the Asian Development Bank-funded Earthquake Emergency Assistance Project in the KPK and AJ&K under two separate projects. The projects comprised designing and construction supervision of 309 middle schools in the AJ&K and 124 educational facilities in the KPK with an overall cost of more than Rs. 6 billion. The scope of services also included project planning and design review.





183 UNICEF-funded Facilities, AJ&K

NESPAK rendered detailed design, tender documents, design review and construction supervision for 183 educational facilities and two Basic Health Units in the KPK and AJ&K at the cumulative cost of Rs. 1.5 billion. The project is funded by the United Nations Children's Fund (UNICEF).

Restoration of Flood Damages 2010 of Canals, Distributaries, Minors and Structures, Sindh

NESPAK in a joint venture provided detailed design and construction supervision services for the Rs. 4 billion project namely "Restoration of Flood Damages 2010 of Canals, Distributaries, Minors and Structures, Sindh." The flood, which was the most disastrous in Pakistan's history, resulted in the breaches of dykes/canal embankments besides damaging the cross regulators. The scope of works comprised rehabilitation, strengthening and restoration of flood damages of canals distributaries, minors and structures in Larkana, Sukkur and Hyderabad Regions.

Flood Damages Restoration Works in Bannu

NESPAK carried out design and construction supervision of the "Flood Damages Restoration Works in Southern Irrigation Circle Bannu—Package-4." The Rs. 841 million project was awarded by the Flood Damages Restoration Directorate, Government of Khyber Pakhtunkhwa.



Restoration of Flood Damages in Southern Punjab

NESPAK was assigned with the evaluation and construction supervision for the Restoration of Flood Damages-2010 Project in Southern Punjab. The scope of work includes the rehabilitation and reconstruction of 113 provincial and district roads scattered in the districts of Dera Ghazi Khan, Rajanpur, Muzaffargarh and Layyah. The project was taken as a challenging job to restore the roads on fast track basis. Performance of NESPAK was so well that the Client, Communication and Works Department, awarded South Punjab Development Program (SPDP) 2010-11 and 2011-12 to NESPAK in the same districts.

Seismic Hazard Microzonation of Murree, Chitral and Quetta Cities

NESPAK was engaged by the United Nations Development Programme, Pakistan and the National Disaster Management Authority to carry out Seismic Hazard Microzonation Studies of Quetta, Murree and Chitral Cities (Old municipal limits). The objective of the project was to understand the nature, type, extent and severity of geologic, seismic and geotechnical hazards, to delineate the areas/zones exhibiting various types of hazards within the urban municipalities and to facilitate the process of urban communities disaster resilience. The project included compilation of GIS-based geo-hazard maps showing various types of hazards along with preparation of detailed Seismic Hazard Microzonation Report. The focus of the project was to facilitate building disaster resilience of the vulnerable urban population.

