
Halcrow Pakistan

Corporate Profile



Halcrow Pakistan

Sustaining and improving the quality of people's lives



Who we are

Established in 1993 by Halcrow Group of UK, Halcrow Pakistan (HPK) is one of the major engineering consulting firms in Pakistan. With over 21 years of experience in delivering large multi-disciplinary projects to small-scale specialist assignments in Pakistan as well as overseas, HPK has established itself as a leading engineering company that has its own identity in Pakistan. With the acquisition of Halcrow Group by CH2M HILL, HPK operates as an independent company that was formerly part of Halcrow Group.

HPK's ability to integrate local teams with international experts from other parts of Halcrow Group continuously brings international best practices to its clients. The diversity of the services we offer means HPK has a solution for its clients no matter what their challenges are.

Clients remain at the centre of HPK's operations and we ensure that HPK contributes in projects as a stakeholder. With a staff strength of over 200 located in offices in Islamabad, Karachi, Lahore, Peshawar, Sukkur and Swat, HPK has and continues to deliver projects for clients that include donor agencies, international funding institutions, international oil and gas companies, international consulting and construction companies, planners and architects,

private infrastructure developers, private property developers, contractors, industrial conglomerates, non-government organizations and selected local and government authorities. Some of our key clients include USAID, DFID, Asian Development Bank, The World Bank, Japan International Cooperation Agency, Halcrow Group Limited, Mott McDonald International, CH2M HILL, Hutchison Port Holdings, OMV, BHP, MOL, Premier Oil, Petronas, KUFPEC and ENI.

Our key to success is our ability to work closely with our clients; understand their challenges; and deliver timely, innovative, sustainable and effective solutions.

Remote design

HPK's design capabilities include offering engineering design and CAD services remotely from Pakistan to its clients based in countries including UAE, Qatar, Saudi Arabia, Libya, Afghanistan, UK and Poland. With state-of-the-art communication facilities including connectivity via telephone, high speed internet, communication software and video conferencing, HPK remains integrated with its clients' design management teams no matter where they are located. HPK's strategy to locate its core design teams in large cities of Pakistan (Karachi and Islamabad) enables it to reach out to its clients' offices on short notice.

Markets we serve

HPK serves its clients across a broad spectrum of markets which include:

- Buildings
- Environment
- Transportation
 - ✓ Bridges
 - ✓ Highways
 - ✓ Ports
- Water
 - ✓ Water Resources
 - ✓ Water & Sanitation
- Urban Developments
- Cross-market services

Services we offer

- Program management
- Project management
- Geotechnical investigations
- Environmental assessments (IEE, ESIA, EIA)
- Health, safety & environmental (HSE) monitoring
- Planning, feasibility, and scoping studies
- Concept and detailed engineering designs
- Access roads and well site engineering and infrastructure for the oil & gas sector
- Construction management and supervision
- Energy, power, and electrical engineering solutions
- Quantity surveying and cost estimation
- Procurement and contracts support
- Community engagement
- Economic and financial analyses
- Institutional assessment
- Sustainability analysis
- Monitoring and evaluation
- Topographic, GIS, and other surveys

Values

- Bringing imagination to all we do
- Delivering on our commitment
- Advancing our skills and experience
- Enjoying what we do

Code of conduct

- Act with integrity
- Open and honest
- Respect the dignity of others
- Share knowledge

Codes of behaviour

- Treat everyone with respect, trust and dignity
- Be polite
- Be professional and ethical at all times
- Be honest and open

Business principles

Conducting our business in a manner that:

- Is befitting our purpose, values and code of conduct
- Brings value to our clients, shareholders and delivery partners
- Is socially responsible
- Is committed to meeting health and safety responsibilities to its employees, its clients and the wider public
- Is environmentally sustainable
- Does not involve corruption, bribery or unethical practices

Business management systems

- Carrying out our business under the guidelines of the Business Management System (BMS)
- Maintaining compliance and certifications in ISO 9001 and ISO 14001

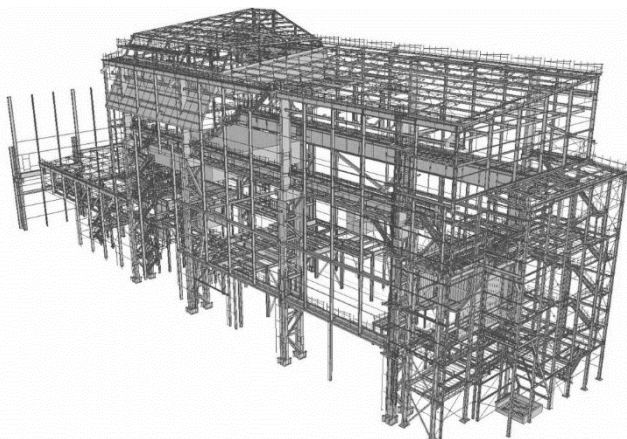


Buildings



The Buildings market is served by our structural engineering division that creates innovative and practical building engineering designs, ensuring that every project that we undertake meets the expectations of our clients and the end users of the buildings. Our teams combine local market knowledge with technical excellence, thus ensuring constant familiarity with the evolving process and requirements of structural design. In areas of our expertise for structural engineering, we offer complete solutions in structural design, planning, construction supervision and project management. Our capability is demonstrated by our:

- Corporate experience gained through projects in Pakistan, UAE, Qatar, Saudi Arabia, Afghanistan and UK
- Professional skills developed upon a wide range of similar projects
- Expert professionals working in our team for structural design
- Technical and computing abilities, exploiting modern technological advancement in software engineering, tailored for every project
- A skilled team of CAD technicians to support the engineering team



Services

We provide services for all buildings and structure types including

- High rise buildings
- Educational buildings (universities, schools, hostels)
- Commercial and residential complexes.
- Hospitals
- Process plants (steel, oil & gas)
- Heavy machine foundations
- Warehouses
- Car parks
- Sewage treatment plants
- Electrical sub-stations
- Ground retention systems

Software

We deploy technical software depending on the complexity of the problem to ensure accuracy of results. Use of both pre-designed and specially designed spreadsheets provides convenience and flexibility to study various design alternatives and framing options with accuracy and speed. Our design teams has expertise in the use of design software that includes:

- ETABS
- SAFE
- STAAD Pro
- SAP
- Auto CAD
- MultiRebar
- Revit Structures

Environment



In the Environment market, HPK assists its local and international clients that include investors, developers, donor agencies, industries and oil & gas companies. HPK offers a full range of services in environmental engineering and environmental management, incorporating all environmental and engineering tasks from inception through to project completion.

HPK has undertaken a number of environmental assessments (EAs) to meet the requirements of both government legislation and the guidelines of international funding agencies. Its approach to the EA process in essence examines the environmental consequences of developmental actions in advance. The emphasis, compared with many other mechanisms for environmental protection is on prevention and where unavoidable on effective mitigation measures for sustainable development. An EA identifies, describe and assess the significance of the direct and indirect impacts of a project on the following factors:

- Physical (soil, water, air, climate, noise and the landscape)
- Biological (flora and fauna)
- Socio-economic (human beings, sustenance income, drinking water, employment, gender equality, mobility & transportation, community grievances, health, safety, religion)
- Material, assets and cultural heritage
- Interaction between the above

Services

HPK's environmental services range from pre-land acquisition, appraisals and desktop studies, through environmental impact appraisals, feasibility designs, planning applications and detailed design to project management, supervising infrastructure works and

advice on all engineering aspects of site development issues.

HPK's services include:

- IEEs, EIAs, SEAs
- Environmental audits
- Environmental risk assessments
- Modelling studies
 - ✓ Air dispersion modelling including:
 - AERMOD
 - ISC3
 - SCREEN 3
 - ✓ Accidental release modelling including:
 - SLAB
 - AFTOX
 - DEGADIS
 - ✓ Other types of modelling including:
 - Noise
 - Thermal Plume
- Emission and effluent monitoring
- Noise abatement studies
- Baseline environmental studies
- Environmental due diligence studies
- Phase I and II site assessment studies
- Environmental monitoring
- HSE monitoring
- Site assessment and audits
- Pollution control process evaluations
- Contaminant assessment and remediation
- Site remediation modelling and technology waste disposal plans
- Geographical information System (GIS)



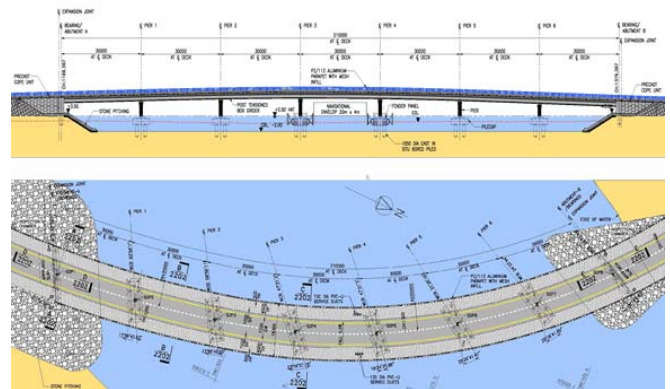
Transportation

Our services in the Transportation market include design and supervision of **Bridges, Highways, and Ports.**

Bridges

We have expertise in planning, concept and detailed design of:

- Interchanges
- Bridges
- Flyover
- Viaducts
- Underpasses
- Culverts
- Pre-engineered bridges
- Submerged RCC service tunnels



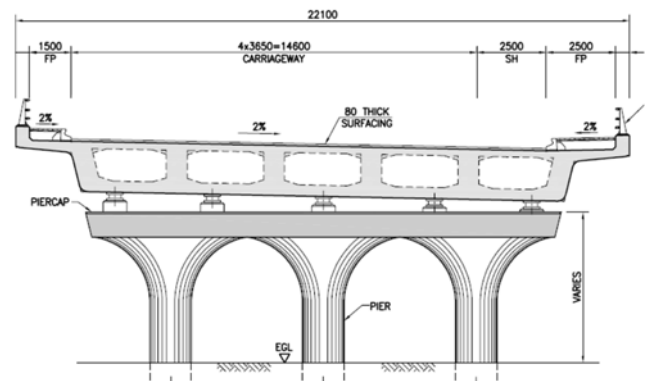
We have successfully delivered projects in Pakistan and the Middle East. We have carried out independent checking of design for various structures such as multi-span post-tensioned box girder bridges for our clients. Our design team comprises of well qualified and experienced engineers and CAD technicians who have the ability to use latest design software.

We are fully conversant with the local as well as international design standards including BS5400, BD37/01, AASHTO, ACI, and WPCPHB 1967.

We have been delivering remote design services in bridge design to our clients in the Middle East since 2005. Our knowledge of the applicable international design standards followed by clients in different countries enables us to deliver projects without going through a learning process of understanding country specific design requirements.

Services

- Bridge assessment, testing and evaluation
- Post-tensioned box girder bridge design
- Design of integral bridges
- Design of steel composite bridges
- Design of cut and cover road tunnels/underpasses
- Design of RCC tunnels
- Design of culverts
- Design of retaining walls
- CAT III checking of bridges and highway structures
- Preparation of shop drawings
- Strategic and master planning
- Studies, feasibility reports and economic evaluations
- Hydraulic modelling and scour protection
- Hazard analysis, risk management and information engineering
- Technical, operation and maintenance support to agencies
- Training and technology transfer



Highways

HPK has expertise in the design of urban and inter-urban road networks as well as rural highways. These highways and roads traverse a variety of terrain from flat desert plains to mountain ranges and from dense urban settings to new developments. Our highway design expertise embraces projects of all sizes and complexities. We have experience of delivering projects in Pakistan, UAE, Qatar, and Saudi Arabia.

We offer complete design solution in road including pavement, hydrology, geotechnical, structural, materials and electrical disciplines, keeping in view the operational and maintenance needs and environmental compliance requirements of the project.

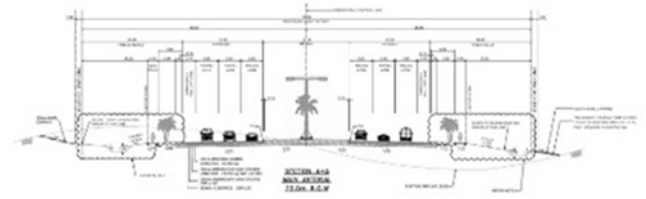


Our design capabilities include:

- Horizontal and vertical alignment design using MX Road and MX Site
- Use of Auto Turn for design review on sharp curves, roundabouts and loops
- Pavement design for new construction as well as rehabilitation
- Road signs and markings for users' safety.
- Design of street lighting
- Design of road detours and diversions and protection measures

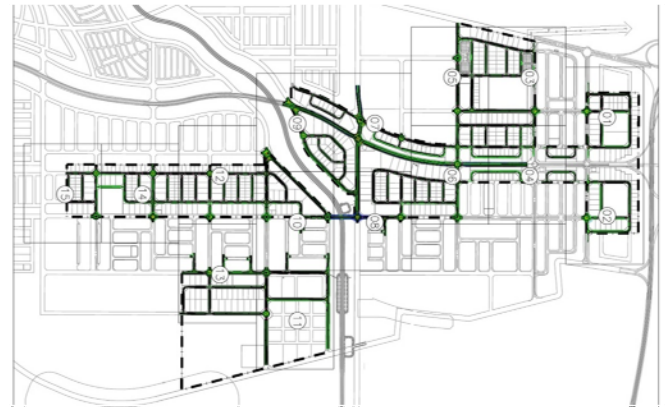
Software

- MX Road
- MX Site
- Auto Turn
- AutoCAD



Services

- Highway and road design
- Mountainous / hilly terrain roads
- Roundabouts & interchanges (at grade, grade separated)
- Grading plans
- Geometric design
- Pavement design
- Evaluation and rehabilitation of pavements and structures
- Street lighting
- Road signage and pavement markings
- Overheads and underpasses
- Bridge and culvert design
- Retaining structures
- Traffic Impact Assessments (TIA)
- Traffic surveys
- Hydrology and drainage



Ports

Ports play a pivotal role in global cargo transportation, and Pakistan's coastline gets its due share. Karachi is home to Port of Karachi and Port Qasim, and then Gwadar has followed. Together with its partners, HPK has provided a wide range of design, and construction services for its clients. Our ports' expertise spans from early advisory work and feasibility studies, to full design and construction management for all phases of port and harbour projects.

Water

Within the Water market, HPK offers services in the Water & Sanitation and Water Resources.

Water & Sanitation

HPK offers local and international services across the whole range of water engineering. We provide services in various water related disciplines including hydraulic structures, hydrology, surface and groundwater resources evaluation, flood studies and urban water services design. We have completed projects of all sizes and complexities as part of joint multi-disciplinary teams with local counterpart personnel, both in the Middle East and Pakistan.

Irrigation, Drainage & Hydraulic Structures

We do designing of irrigation and drainage canals and associated structures, which varies from the design of small field channels carrying a few litres to large canals with capacity of 30 m³/s. Similarly we design a range of hydraulic structures from small field outlets to large flow control structures.

Urban Water Outputs:

- Preliminary network layout drawings
- Detailed network layout drawings
- Hydraulic design
- Design calculation
- BoQs on CESMM3 format

Services

- Sewerage system
- Storm water drainage system
- Drinking water supply system
- Urban irrigation system

Water Resources

HPK offers local and international services across the whole range of water engineering. We provide services in various water related disciplines including hydraulic structures, hydrology, surface and groundwater resources evaluation, flood studies and urban water services design. We have completed projects of all sizes and complexities as part of joint multi-disciplinary teams with local counterpart personnel, both in the Middle East and Pakistan.

Groundwater Hydrology Studies

HPK has expertise in surface water hydrology, pipeline engineering, drilling investigation, water quality, field hydrology, etc. Our expertise also includes tender preparation, drilling program investigation and supervision, data review, site inspection and development of scope of work for contractors.

Surface Water Hydrology

We support data screening for stationary and consistency, frequency analysis, flood estimation studies by rainfall-runoff relationships, flood routing and preparation of flood lines and complete flood maps with the integration of hydraulic models and digital terrain models.

Services

- Water resource planning
- Irrigation, drainage and flood control
- Hydraulic structures
- Surface & groundwater hydrology
- River engineering works

Urban developments

HPK provides solutions to city municipalities, local and international real-estate developers, and industrial area authorities. Solutions encompass initial planning, design through to complete project engineering and management. Our in-house professionals, multi-disciplinary capability, combined with our extensive construction experience, provides a seamless, efficient process for clients on both infrastructure design and supervision projects.

We have the resources, knowledge, and creativity to transform vision into reality. Our services range from pre-land acquisition, appraisals and desktop studies, through environmental impact appraisal, feasibility designs, planning applications and detailed design to project management, supervising infrastructure works and advice on all engineering aspects of urban developments.

HPK provides review and certification of land development plans, code enforcement and engineering assistance, procurement specification development, project management and site supervision, Contract Administration, Expert Testimony, permitting and investigation and resolution of contractual complaints.

Services

- Traffic impact study
- Road Network
- Roads and parking designs
- Verification of topographic data
- Geotechnical investigations
- Levelling and grading and finish grading
- Potable water
- Foul water
- Irrigation network
- Storm drainage
- Firefighting network
- Electrical power (EHV, HV & MV Power);
- Street lighting
- Telecommunication system
- Bridges, culverts and drainage structures;
- External Electrification System
- Road Electrification/Street Lighting
- Telecom Distribution System
- Ancillary Works
- Highway and road design.
- Roundabouts & interchanges (at grade, grade separated).

- Grading plans.
- Evaluation and rehabilitation of pavements and structures.
- Road signage and pavement markings.
- Overheads and underpasses.
- Bridge and culvert design.
- Retaining structures.
- Traffic Impact Assessments (TIA).
- Traffic surveys.
- Hydrology and drainage

Cross-skill markets

Within the Cross-Skill markets, HPK offers the following:

Construction Management and Contracts

HPK provides a full range of services in contract and construction management. This extends from planning and pre-construction stage; into construction; and then commissioning; and close-out. A brief list of the services we offer are:

Contracts Administration

Contracts Section administer and support the entire HPK's tender stage activities and ensures that all tasks are performed in conformance with the applicable Contract Documents, and regulatory requirements. Documents are prepared in conformance with PEC, PPRA, SPRA, or FIDIC guidelines.

Construction Supervision

HPK undertakes the technical duties of the engineer or employer representative, as defined by the Conditions of Contract between the client and contractor, and coordinate and administer the project on behalf of the client. This service can be offered to encompass the full role of an engineer/employer representative or limited to whatever our client's requirements are for each project.

Our focus is to develop a strong project team to plan ahead, identify potential problems and develop effective solutions that minimize disruption to progress and avoid unnecessary cost, HPK has a staff that provides depth and breadth in the delivery of projects in all fields. The teams are custom structured and provided to clients to deliver the project in the best manner.

Project Controls

This includes project planning/scheduling services and cost estimation and cost control services. Planning and Scheduling Services includes review of baseline schedules, progress updates and monitoring, evaluation of time and delay claims, and look-ahead schedules. Whereas cost engineering services include preparation of cost estimates at all levels of project and then provide cost controls support to project teams during construction.

Constructability Reviews

HPK offer clients during the design phase to provide detailed reviews of draft construction plans and specifications. The construction documents to be reviewed include draft plans, draft technical specifications and the proposed bid schedule.

An independent and structured review of construction bid documents is done to make certain that the work requirements are clear, the documents are coordinated, and that they assist the client in bidding, construction and project administration to result in reduced impacts to the project.

Our interdisciplinary constructability review method is an intense cross check of all construction documents and as a whole.

Testing and Commissioning

HPK provides services for the testing and commissioning of buildings and plants. This process consists of verifying all of the subsystems for mechanical (HVAC), plumbing, electrical, fire/life safety, building envelopes, interior systems, cogeneration, utility plants, sustainable systems, lighting, wastewater, controls, and building security to achieve the owner's project requirements as intended by the client.

Claims Support

HPK provide services in preparation and analysis of claims and disputes for a wide range of construction and engineering projects. We assist our clients in all construction industries by identifying, analysing, quantifying, and presenting construction claims that may arise during a project.

With our specialized knowledge and expertise in construction claims evaluation, preparation, and resolution, HPK can guide clients through the issues most common in construction disputes: completion delays; cost overruns; contract application; workmanship and scope variations; and project management performance.

By analysing the construction contract and the parties' performance throughout the construction duration, our experts can identify liability, quantify damages, and assist in resolving the dispute in a timely and cost effective manner.

HSE

HPK has an experienced operational HSE team who have managed field operations in the construction sector. HPK's aim to provide professional and practical

HSE management solutions that enable our clients to improve safety, increase efficiency and profitability and meet regulatory requirements. We specialize in translating systems and plans into action. We have particular experience in construction and offshore work and marine. Specific services provided includes operational and HSE planning, developing HSE management system and conducting HSE audits.

O&G Access Roads and Well Sites Development

In addition to the environmental services, HPK also provides a wide range of civil engineering solutions to the oil & gas industry including access route selection, well and camp site planning and designing, and contract preparation for civil works for various stages of the oil & gas exploration process i.e. seismic exploration, exploratory and appraisal well drilling, both at offshore in the Arabian sea, and on-shore in the mountainous and desert terrains.

HPK provides a full range of services in contract administration and construction management to oil & gas industry. The services include:

- Project management
- contract administration
- tender document preparation & evaluation
- construction management & supervision
- contractor's claims analysis and resolution (Expert Witness Testimony)

The experience with Oil & Gas industry has a major Contribution to HPK's capabilities. In this sector, we have completed over 250 projects within last 09 years (including EIA/IEE, HSE Monitoring & Auditing, Access Road/Camp Site layout design, road and well site construction supervision, tender documents preparation, evaluation and adjudication projects).

Services

- reconnaissance field visit/survey
- concept design and feasibility studies
- access road and well/camp site development
- water supply options
- detailed engineering design
- tender document preparation and evaluation
- construction supervision
- contract administration
- disaster Controls
- site restoration

Electrical Engineering Services

HPK specializes in designing of electrical systems for low, medium and high rise buildings ranging from hotels, restaurants, banks, residential, commercial, shopping malls, offices, health care and institutional buildings. We have particular experience in design of industrial projects, natural gas and diesel power plants and distribution sub-stations (11kV/400V) including MV & LV Power. HPK electrical services division is served by a professional team of Electrical engineers and CAD draftsman.

The services we offer include:

- Design of infrastructure electrical networks
- Design of building electrical works
- Design review & value engineering for electrical works
- Master planning for infrastructure electrical networks
- Project management & top supervision
- Electrical audit of existing electrical facility / installation
- Advisory consultancy for running electrical facility

Geotechnical Engineering

HPK offers diverse services to clients locally and globally through an experienced geotechnical team. Services we offer include;

- Supervision of the geotechnical work including pile and other foundation load tests, ground improvement works and pavement construction works
- Geotechnical design including bearing capacity analysis of shallow and deep foundations, settlement analysis and slope analysis
- Highway & Airport Pavement Assessment and Evaluation
- Road Rehabilitation design and construction

Rebar Detailing

HPK comprehensively understands the complexity that has to be entangled with while a structural design is processed for actual construction at site. In its RC detailing services, HPK utilizes high-tech specialized software like Multisuite Rebar and produces shop drawings that the contractors can directly use to facilitate fully automatic fabrication of reinforcement. The end product so produced also caters for the constructional constraints like joints, temporary openings, machinery operations, etc

Geographic Information System - GIS

Geographic Information System-GIS is a system of coordinated sets of information such as maps, images and textual data, in which all data components are created, stored, retrieved, updated and compared by use of common geographic coordinates. GIS provides the ability to rapidly manipulate data and so search for relationships between variables. Using GIS, digital data can be overlaid to examine conditions at any particular location.

HPK is using GIS and remote sensing technology to provide project planning, implementation and customisation services on diverse projects needing to manipulate spatial information. Our services in GIS range from Implementation of GIS projects of small scale applications within an engineering project through to major corporate system development for management purposes. We have used this technology on variety of projects comprising town planning, infrastructure development, water resources management, environmental management, social surveys, census data management, property management, and oil and gas sector projects.

Software Usage

- ERDAS Imagine Professional
- Arc Gis
- Arc View
- MS Access
- MS SQL Sever
- MS Visual Studio

Services

- GIS/Remote Sensing Analysis
- GIS Planning, Design & Development
- Geographic Data Processing and Interpretation
- Database Development

Institutional, Social & Financial Assessments

HPK's reputation in providing services for social and rural development was established early in the company's history and it covers a wide range of physical infrastructure and social activities for rural development. These include community development, institutional development, and provision of basic infrastructure, roads, irrigation, power, water supply, and sanitation with participation of beneficiary communities.

Social development requires multi-disciplinary strategies that are low cost, equitable, replicable and participatory. A range of capabilities is needed that can readily be adapted to diverse social, political and economic settings and which encourages the growth of local, regional and national initiatives in all facets of social development.

In most of our social development projects, development of community infrastructure has been combined with institutional development, capacity building, counterpart training and involving the community, women and NGOs, in order to create a more balanced and integrated approach to rural development. All activities are planned and implemented with our interdisciplinary resources, which are ideally suited to tackle the tasks assigned.

Our assignments also cover full spectrum of rural development and rural infrastructure projects. Working with people through education, training and skills development is a fundamental part of our approach.

Monitoring & Evaluation

HPK offers services in design and implementation of M&E frameworks for projects & programs monitoring and evaluation, including data collection. This include (but not be limited to) reporting against the framework which also specifies primary data collection activities for which HPK is responsible.

We also work closely with donor sector clients in providing pivotal connection of M&E frameworks for assessing impacts of their interventions on the community.

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