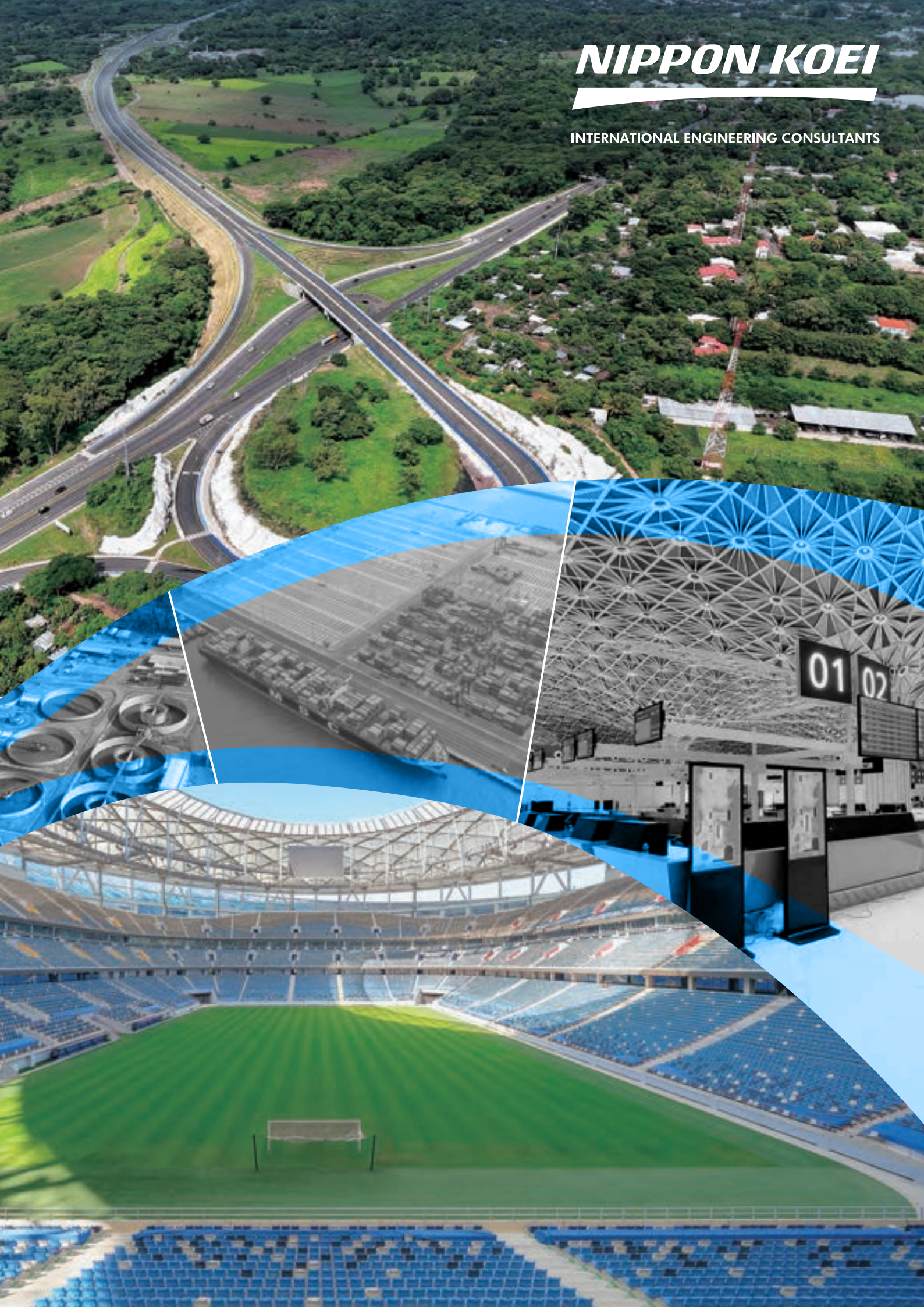
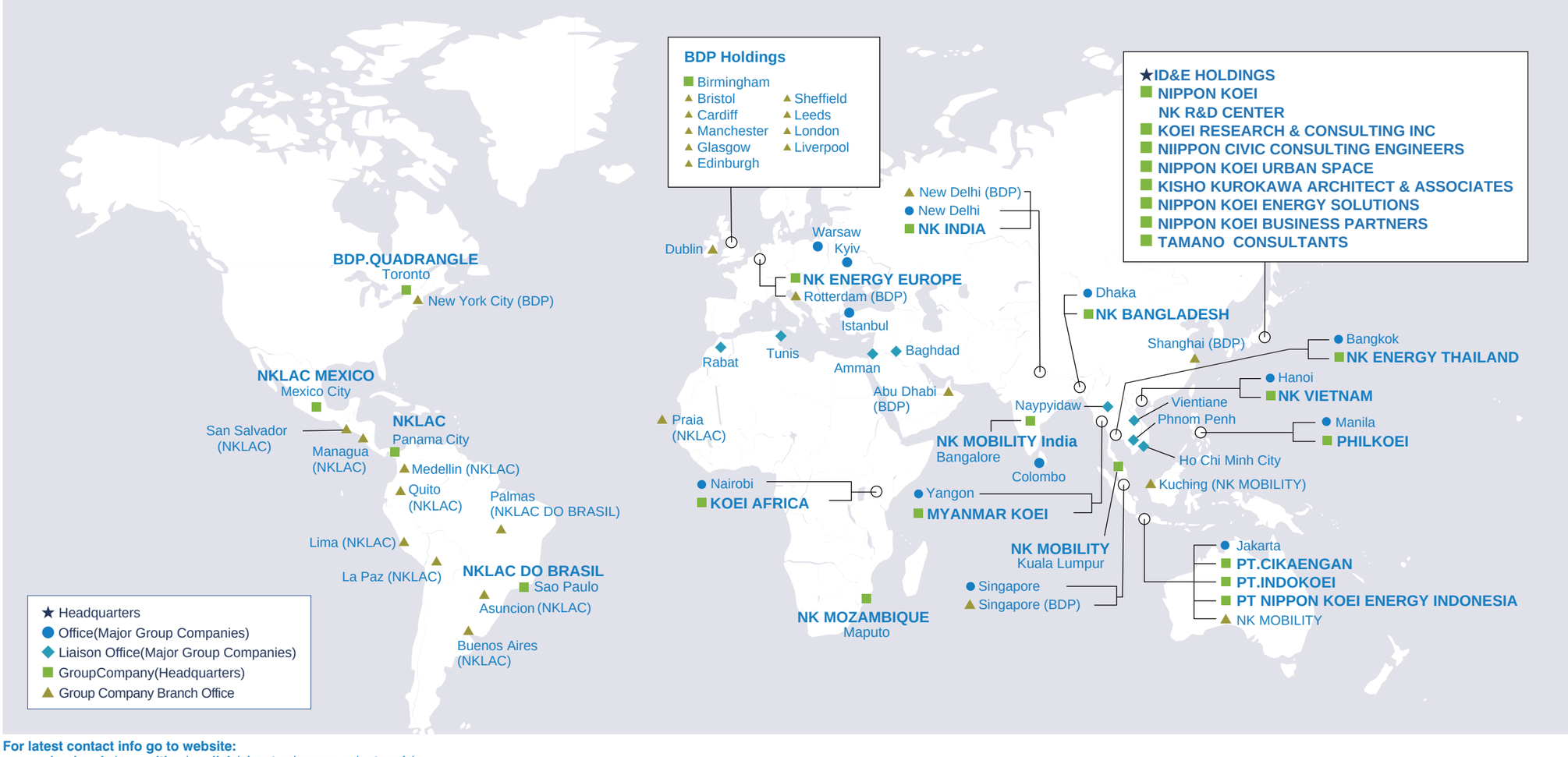

NIPPON KOEI
INTERNATIONAL ENGINEERING CONSULTANTS
01
02

# Nippon Koei Offices Worldwide




**For latest contact info go to website:**
**www.n-koei.co.jp/consulting/english/aboutus/company/network/**

NIPPON KOEI

## Company Overview

Nippon Koei is Japan's No. 1 International Engineering Consultancy, delivering innovative and sustainable solutions to shape the future of infrastructure worldwide.

Our multidisciplinary professionals provide comprehensive services—from planning design, and construction supervision to Operation & Maintenance—across a broad range of sectors, including energy, transportation infrastructure, water resources, environmental management, disaster risk reduction, agriculture and rural development, urban planning and architecture, as well as social and economic development.

With 80 years of experience, Nippon Koei has successfully completed over 6,500 complex infrastructure projects in 160 countries and region, earning the trust of governments, development partners, and private clients worldwide.

# ID&E Group's Three Businesses

## Consulting Business

### Playing an Active Role in Infrastructure Development

By supporting regional and national development across a wide range of fields, we also play an active role on the front lines of global social issues and humanitarian aid, including environmental measures to combat global warming and reconstruction after conflict or natural disasters.

## Urban & Spatial Development Business

### Fusing Our Passion for Architecture and Engineering with User-Centred Design

By leveraging our civil engineering and architectural expertise, we advance sustainable, resident-focused approaches through comprehensive urban development, addressing complex urban challenges and contributing to society.

## Energy Business

### Providing One-Stop Services for Clean Energy

We propose an optimal solution for electric power companies to support electric power development and meet electric power needs in Japan and Worldwide.

# Partnership between Tokio Marine Group and ID&E Group

The ID&E Group embarked on a new journey as part of the Tokio Marine Group in 2025.

By combining Tokio Marine Group's "insurance" expertise and risk data with NK's advanced "technology" and disaster prevention and mitigation consulting capabilities, we deliver a one-stop solution from risk analysis to countermeasure implementation and emergency compensation, supporting safe, secure, and prosperous lives worldwide.



# Nippon Koei Group Numbers

**Established**

1946*

The company was established in 1946* by founder Yutaka Kubota, aiming for postwar reconstruction.
More than 75 years later, the founding spirit continues on through our Management Philosophy, still flowing through our hearts.

* Nippon Koei's founding year

**Staff numbers**

Approx. 6,700

Aiming to solve social issues, every one of our staff in Japan and abroad continues to take up the challenge and play an active role. We are continually striving to discover and develop professional talent.

**Sales in Japan**

Ranked No.1 in Sales in Japan's Civil Engineering Consulting Industry

Nippon Koei has established itself as Japan's No. 1 civil engineering consultant regarding sales*.

* Source: "Sales ranking of engineering consulting firms in Japan," Nikkei Construction, April 20, 2025

**Operations**

Over 160 countries and regions

Since foundation, we have developed social capital overseas, providing various Japanese technologies abroad.

**Revenue**

Approx. 198 billion yen

Each of the three segments of Consulting, Urban & Spatial Development, and Energy continues to grow, and their sales volume is increasing yearly.

**Overseas sales ratio**

Approx. 45%

We aim to increase our overseas sales ratio by meeting the needs of those living in each region with world-class technology.

**Project numbers per year**

Approx. 9,000

We continue to take on the challenge of solving various national, regional, and everyday problems through various projects.

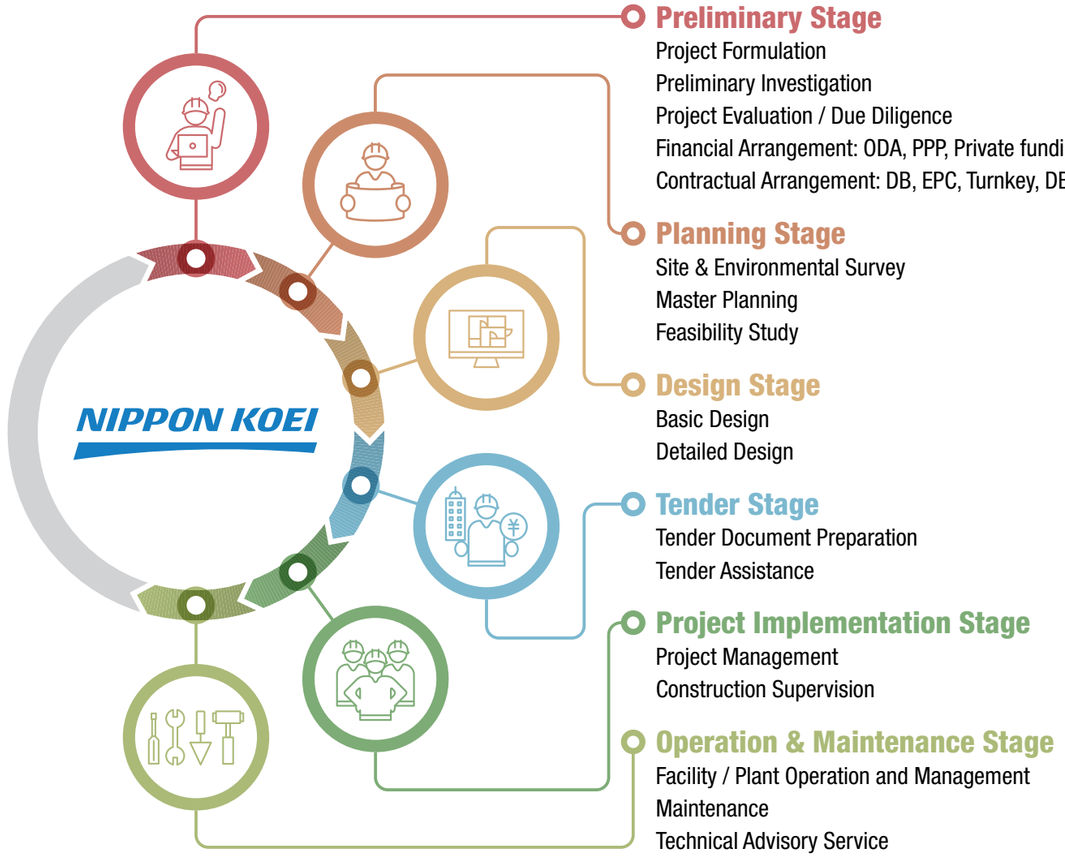
**Group firms**

88 companies

Group companies work together to solve problems and create value. We will continue to expand our network and achieve further growth.

# Full Range of Project Management Services

**We provide our clients with the highest quality engineering consulting services in all disciplines to take projects through all life-cycle stages from investigation to design, implementation and even operation.**




### Preliminary Stage
Project Formulation
Preliminary Investigation
Project Evaluation / Due Diligence
Financial Arrangement: ODA, PPP, Private funding, etc.
Contractual Arrangement: DB, EPC, Turnkey, DBO, etc.

### Planning Stage
Site & Environmental Survey
Master Planning
Feasibility Study

### Design Stage
Basic Design
Detailed Design

### Tender Stage
Tender Document Preparation
Tender Assistance

### Project Implementation Stage
Project Management
Construction Supervision

### Operation & Maintenance Stage
Facility / Plant Operation and Management
Maintenance
Technical Advisory Service



# Core Competencies of Nippon Koei

Nippon Koei is a diversified consulting firm providing engineering solutions across a wide spectrum of disciplines that this brochure describes.

## Energy Generation (including NKES)
- Hydroelectric Power
- Independent Power Producer Hydropower
- Information and Communication Technology
- Energy Transition for Thermal Power Plants
- Power Infrastructure Development
- Hydrogen Energy
- Battery Ancillary Services

## Transportation Infrastructure
- Railways (including NKMobi)
- Airports and Aviation Services
- Ports and Harbors
- Coastal Conservation
- Bridges
- Roads and Highways
- Intelligent Transportation Systems (ITS)
- Tunnels (including NCC)
- Infrastructure Maintenance and Management
- Transportation Planning
- Transit Oriented Development (TOD)
- Mobility as a Service (MaaS)

## Urban Planning (including NKUrban & BDP & KKAA)
- Industrial Parks & Special Economic Zones (SEZ)
- Urban Planning
- Smart City
- Urban Design and Architecture
- Data Center Consulting

## Disaster Management
- Satellite Information Services
- Disaster Management
- Earthquake and Tsunami Disaster Risk Reduction
- Geo Hazard Management
- Biological Soil Crust (BSC)

## Water Resources, Water Supply, Sewerage
- Water Resources Management
- Flood Management
- Water Supply
- Desalinization for Water Supply
- Sewerage
- Urban Drainage

## Environmental Management
- Environmental and Social Management
- Environmental and Social Impact Study
- Climate Change Consulting
- Forest Management and Nature Conservation
- Solid Waste Management

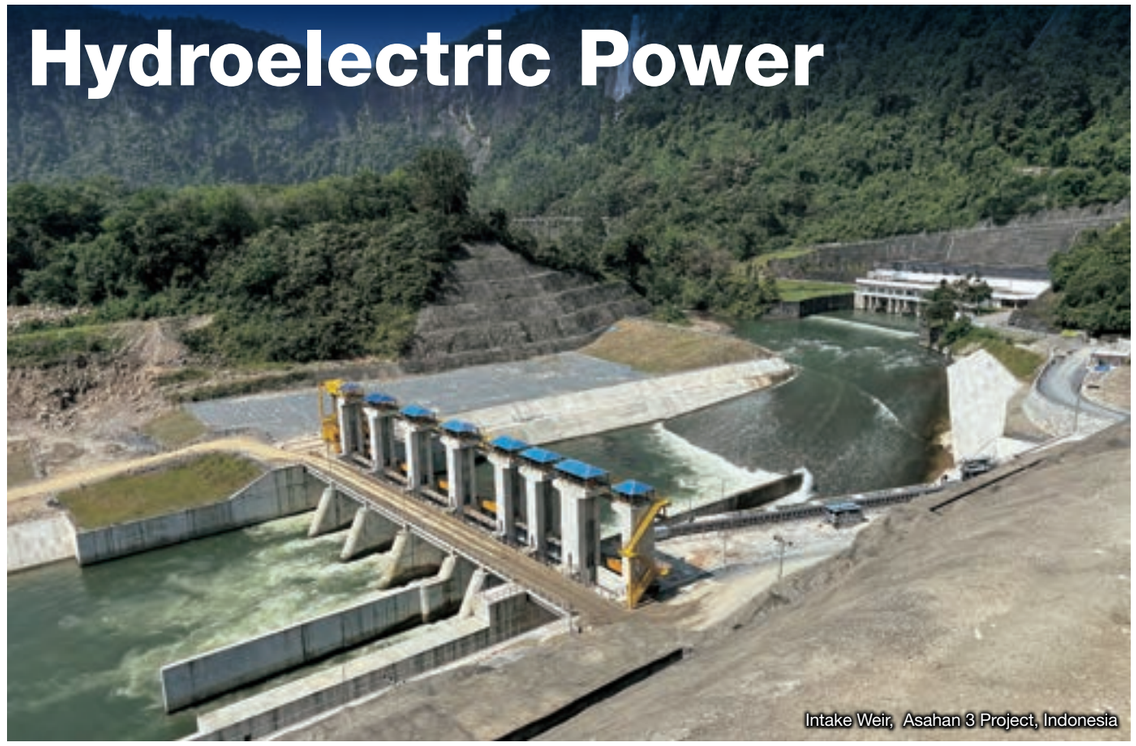
## Agriculture & Rural Development
- Agriculture and Rural Development
- Rural Infrastructure
- Agricultural Support and Training Services
- Climate Change Mitigation and Adaptation in Rural Areas

## Other Services
- Sustainability Consulting Services
- Geology, Environmental Geology, Hydrogeology, and Soil Engineering

## Social & Economic Consultancy (KRC)
- Economic Development
- Education & Human Resource Development
- Special Development & Peacebuilding
- Health & Well-being
- Design & Engineering

## Nippon Koei Research & Development Center

# Hydroelectric Power


Intake Weir, Asahan 3 Project, Indonesia

Overseas small- and medium-scale hydroelectric power generation plants typically operate and serve as decentralized energy sources delivering stable electricity supply to local communities. They often use run-of-river systems without large reservoirs, minimizing environmental impact. In contrast, large-scale hydropower generation plays a crucial role in the overall power grid. Equipped with large reservoirs, they can store water to generate electricity during peak demand periods, contributing to grid stability and acting as a balancing power source for intermittent renewable energy. While small- and medium-scale hydropower supports local energy self-sufficiency, large-scale hydropower enhances the resilience of the broader energy system.

We have expertise in the planning, design, operation, and maintenance of such hydroelectric power generation projects and are dedicated to addressing future energy challenges in Japan and worldwide. Furthermore, we utilize advanced tools and technologies at our own R&D Center to enhance our design capabilities.

## Types of Services

### Dams and Intake Facilities

We evaluate various types of dams and intake facilities to match the actual site conditions, allowing us to propose the most optimum design.


Dam Site at Masjid Soleiman Project, Iran

### Powerhouse

We adjust powerhouse requirements for civil, hydro-mechanical, and electro-mechanical systems from the design stage to construction stage.


Powerhouse at Musi Project, Indonesia

### Rehabilitation

We provide high-quality engineering services to develop rehabilitation plans based on identified causes of damage and formulate expansion plans that align with the surrounding environment.


Da Nhim Rehabilitation Project, Vietnam

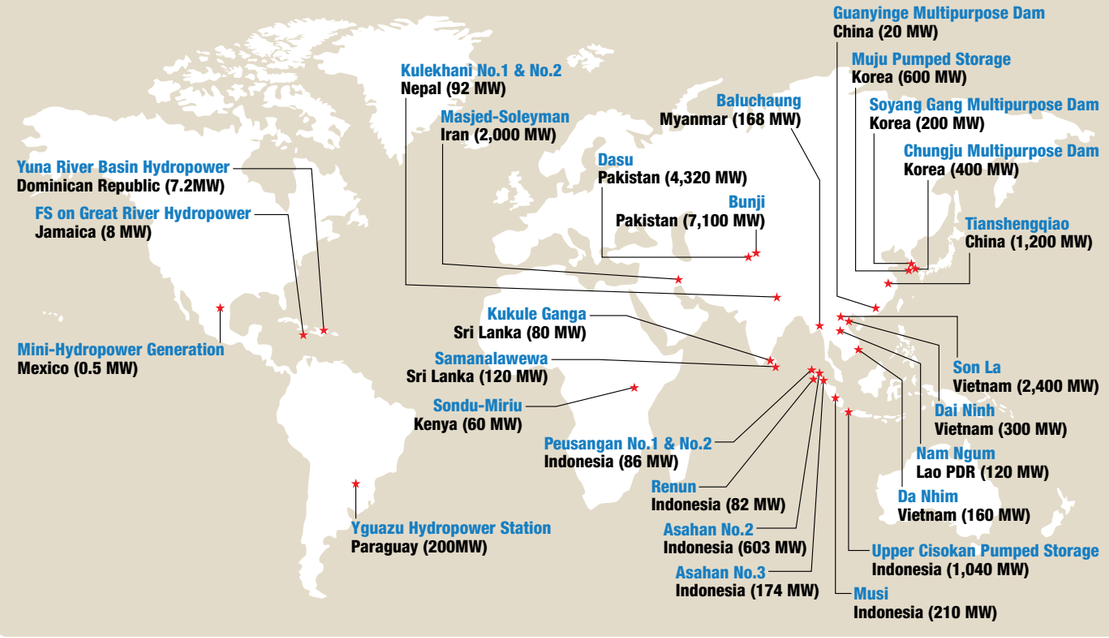



Nam Ngum 1 Hydropower Station, Lao PDR
(Expansion Area on the Left Side)


Concrete Work at Headpond in Asahan 3 Project, Indonesia


Intake Weir in Peusangan Project, Indonesia

## Selected Project Experience




## Our Project

### Asahan No.3 Hydroelectric Power Plant, Indonesia

While BIM implementation was not considered during the previous design and procurement stages, at the client's strong request, we shared our expertise through BIM introduction seminars and proposed its adoption. As a result, the employer decided to implement BIM as a pilot project during the construction phase. The project was successfully completed in December 2024, without delays, and is currently under commercial operation.

# Independent Power Producer Hydropower


Okura-Masudama Small Hydro Electric Power Plant Project, Japan


Shinsogi Mini Hydro Project, Japan


Suidoyama Hydropower Station, Japan

Nippon Koei (NK) and Nippon Koei Energy Solutions (NKES) provide comprehensive know-how for private firms to become independent power producers (IPPs). Our high quality technical services cover all project stages (as shown below) necessary for private companies to develop projects. We have completed over 20 projects in this new field internationally and in Japan.

## Our Services by Project Stage

| Project Stage | Our Services |
|---|---|
| **Potential Evaluation** | We assist site evaluation of the project from the a technical point of view. |
| **Planning** | We study and evaluate the feasibility of projects including consideration of financing scheme such as Public Private Partnership (PPP). |
| **Design** | We design stable, secure, and efficient plant facilities based on structural analysis, stability calculation, and hydraulic calculation. |
| **Construction** | We provide technical advisory services such as structural calculation for economical design and proposal of countermeasures to against construction problems. |
| **O&M Plan** | We provide operation and maintenance plans to ensure the power plant runs smoothly and efficiently. |
| **Assessment** | We assess hydropower structures, propose improvement plan of operation and maintenance, and provide rehabilitation plan for extension of life. |
| **Operation** | We operate our own small hydropower plants as Independent Power Producer (IPP) by using our sophisticated technologies and experience. |

## Our Project

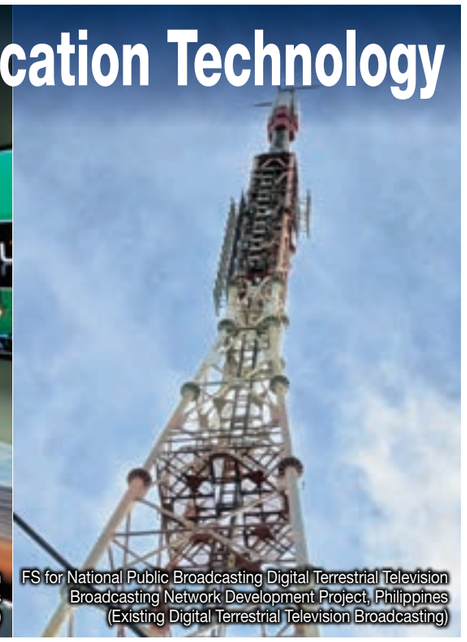
### Cikaengan Hydropower Plant, Indonesia

The Cikaengan Hydropower Plant, which we planned, designed, and constructed using our own funds, is located on the Cikaengan River in West Java, Indonesia. With a capacity of 7.2 MW, the plant began supplying electricity to residents in December 2021, significantly improving their quality of life.



# Information and Communication Technology


FS for National Public Broadcasting Digital Terrestrial Television Broadcasting Network Development Project, Philippines (Existing Digital Terrestrial Television Broadcasting Station)


FS for National Public Broadcasting Digital Terrestrial Television Broadcasting Network Development Project, Philippines (Existing Digital Terrestrial Television Broadcasting)

NKES stands at the forefront of designing communication infrastructure systems to provide accurate and prompt information essential to the safety and security of citizens worldwide. Leveraging cutting-edge information and communication technologies (ICT), we are committed to developing innovative ICT systems that improve quality of life.

## ICT Services

With an extensive track record of successful international deployments, our services consistently enhance societal security and efficiency of stakeholders all over the world.
Here are some examples of our specialized capabilities in advanced technological solutions:

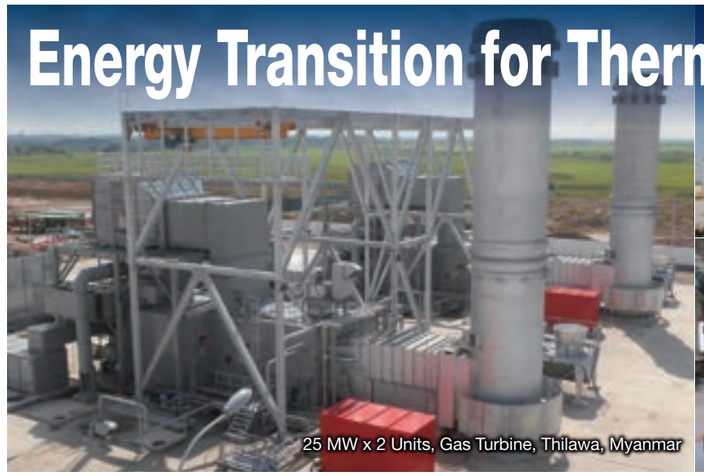
- **Intelligent transport system**
- **Flood forecasting and warning system**
- **Digital terrestrial television broadcasting**
- **Broadband network**
- **ICT systems for airport, tunnel, & disaster prevention**
- **Local / Private 5G**

A showcase of our overseas ICT deployment is the recent demonstration of local 5G-based applications in Thailand conducted in collaboration with telecom carriers. By integrating local 5G and OpenRAN technologies, we performed a demonstration test of a solution for a smart factory. Furthermore, in countries that have adopted the ISDB-T digital terrestrial television broadcasting system developed by Japan, projects are being implemented to facilitate the migration from analog to digital terrestrial television broadcasting.

## Selected Project Experience

| Country | Project |
|---|---|
| **Philippines** | Study on Support for Broadband Network Development |
| **Philippines** | Preparatory Survey for National Public Broadcasting Digital Terrestrial Television Broadcasting Network Development Project |
| **Thailand** | Demonstration Testing of Local 5G-based Applications in an Industrial Park |
| **Malaysia** | Contract for Demonstration of ICT Solution for Smart Buildings in Johor Bahru |
| **Myanmar** | Telecommunication Network Improvement Project |
| **India** | Project for Installation of Chennai Metropolitan Area Intelligent Transport Systems |
| **Iraq** | Communications Network Development Project in Major Cities |

# Energy Transition for Thermal Power Plants


25 MW x 2 Units, Gas Turbine, Thilawa, Myanmar


A High-Efficiency Cogeneration System, Uzbekistan


Hartha Thermal Power Station Rehabilitation Project, Iraq

NK and NKES provide consulting services related to thermal power projects in a manner that contributes to the transition from fossil fuel power sources to decarbonized power sources. We aim to achieve this transition benefiting local communities through various pathways appropriate to each country and region, with the goal of both sustainable global environment and economic growth. We provide implementation for all project stages from planning, design, tendering to construction supervision and O&M. We also provide consulting services on the study of energy master plan for carbon neutrality.

## Experts

- **Port experts**, specialized in jetty planning and design when a thermal power plant is located near the coast.
- **Water & sanitation experts**, to find solutions when a thermal power plant is far from water resources.
- **Railway experts**, to plan the most suitable fuel supply for an inland thermal power plant.
- **Social & environmental experts**, to conduct Environmental Impact Assessments and countermeasure planning.
- **Carbon neutrality experts**, to plan the most effective $CO_2$ reduction measures at thermal power plants.

## Selected Project Experience

| Capacity | Type | Country | Project |
|---|---|---|---|
| **Conventional Thermal Power Plant** | | | |
| 1,000 MW x 4 | Coal ST (USC) | **India** | Feasibility Study for Srikakulam Ultra Super Critical Coal Fired Power Plant for APGENCO (Andra Pradesh State owned Power Generation Company) |
| 660 MW x 1 | Coal ST (USC) | **Pakistan** | Preparatory Survey for Lakhra Coal Thermal Power Plant Construction Project |
| 300 MW | Gas CCPP | **Myanmar** | Preparatory Survey for Kyaukse Gas Combined-Cycle Power Plant Construction Project |
| 200 MW x 1 | Oil ST | **Iraq** | Consulting Services for Hartha Thermal Power Station Rehabilitation Project |
| 25 MW x 2 | Gas GT (Simple Cycle) | **Myanmar** | Consulting Services for 25MW 2units Gas Turbine Construction Project in Thilawa SEZ |
| **Carbon Neutrality** | | | |
| 717 MW x 2 | Coal ST (Subcritical) | **Thailand** | Feasibility Study for Ammonia Co-Firing for Existing Coal-Fired Thermal Power Plant |
| 16.7 MW x 1<br>7.2 MW x1 | Gas CHP | **Uzbekistan** | A High-Efficiency Cogeneration System Using Distributed Small to Medium-Size Gas Turbines (The Demonstration Project) |
| | Study | **Indonesia** | Feasibility Study and Value Chain Assessment of Ammonia Co-firing for Coal Fired Power Plant in Sularaya |
| | Study | **Vietnam** | Project for Decarbonization Masterplan for the Power Sector in Vietnam |

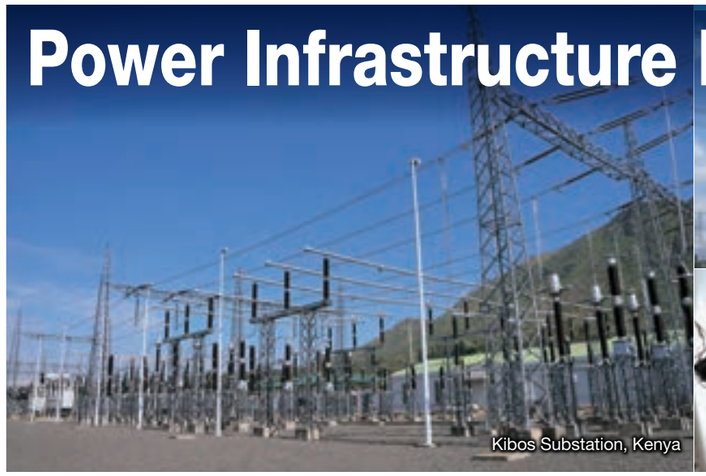
## About Nippon Koei Energy Solutions Co., Ltd. (NKES)

NKES, established in 2023, was founded to inherit the energy-related business of NK and to provide one-stop, high value-added services that meet a broad range of customer needs arising from increasingly complex social and environmental challenges – particularly those related to energy. With a steadfast commitment to supporting a stable supply of electricity, a foundation essential to modern society, we operate across Japan and worldwide. As the global power and energy sector undergoes a period of rapid transformation, we remain dedicated to delivering innovative solutions that address diverse needs through consistent systems and advanced technological capabilities.

As the power and energy business around the world enters a period of transformation due to decarbonization, we leverage our strengths across the entire energy value chain to create new value and contribute to a more sustainable and resilient future.



# Power Infrastructure Development


Kibos Substation, Kenya


Olkaria-Lessos-Kisumu Transmission Line, Kenya


Underground Transmission Line, Cambodia

NK and NKES carry out surveys, planning, and construction management for new and refurbished substations, power stations and switchyards, power transmission network including overhead transmission lines, underground and marine cable lines, grid substations, and distribution lines. We also carry out works related to power receiving and transforming facilities for private customers.

Also, we bring renewable energy and electrification to rural and remote communities to improve the quality of life and educational level for children. We make use of renewable energy sources such as wind, solar, and mini-hydro generation not only for independent off-grid, but also for on-grid networks.

## Types of Services

- **Experience** in all project stages that allows us to evaluate and design transmission line routes and substation sites based on actual geographical and environmental conditions.
- **In-house specialists** for all project stages.
- **Advanced tools and technologies** for planning and design stages, such as PSS/E, DigSILENT, PS-CAD, E-TAP, and SIMDIST for network analysis, and PLS-TOWER, PLS-CADD for transmission line design.

## Selected Project Experience

| Line Distance | Country | Project |
|---|---|---|
| 1,106 km | **India** | Simhadri & Vizag Transmission System Project |
| 330 km | **Vietnam** | Ham Thuan - Da Mi Hydropower Project (with the Associated Transmission Line and Substations) |
| 322 km | **Bangladesh** | West Zone Power System Development Transmission Line Project |
| 300 km | **Lao PDR** | Greater Mekong Power Network Development Project |
| 296 km | **Kenya** | Olkaria-Lessos-Kisumu Transmission Line Project |
| 240 km | **Afghanistan** | Emergency Infrastructure Rehabilitation and Reconstruction Project<br>(Part B: Power Component) – Transmission Line Heiratan – Pule-Khumri |
| 200 km | **Lao PDR** | Southern Region Power System Development Project |
| 174 km | **Sri Lanka** | Transmission & Grid Substations Development Project |
| 102 km | **Peru** | Electric Frontier Expansion Project (II) |
| 13 km | **Cambodia** | Phnom Penh City Transmission and Distribution System Expansion Project |

## Our Project

### Mega Solar Power Plant Project in Wakayama Prefecture, Japan

This project is the construction of a mega solar power plant on the site of a former golf course in Wakayama Prefecture, Japan, and NKES has provided the client with an owner's engineering service. The power generation capacity is approximately 111 MW dc, equivalent to the annual electricity consumption of 35,000 households. We will provide consulting services for renewable power plant both domestically and internationally.

# Hydrogen Energy

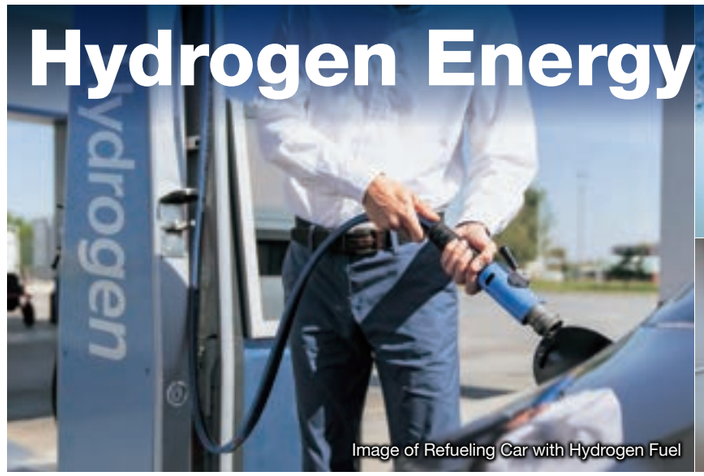


Image of Refueling Car with Hydrogen Fuel

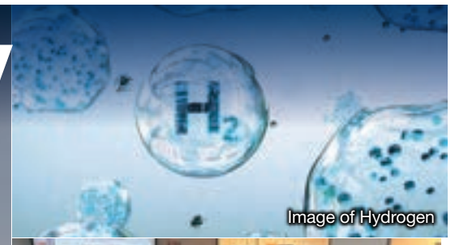


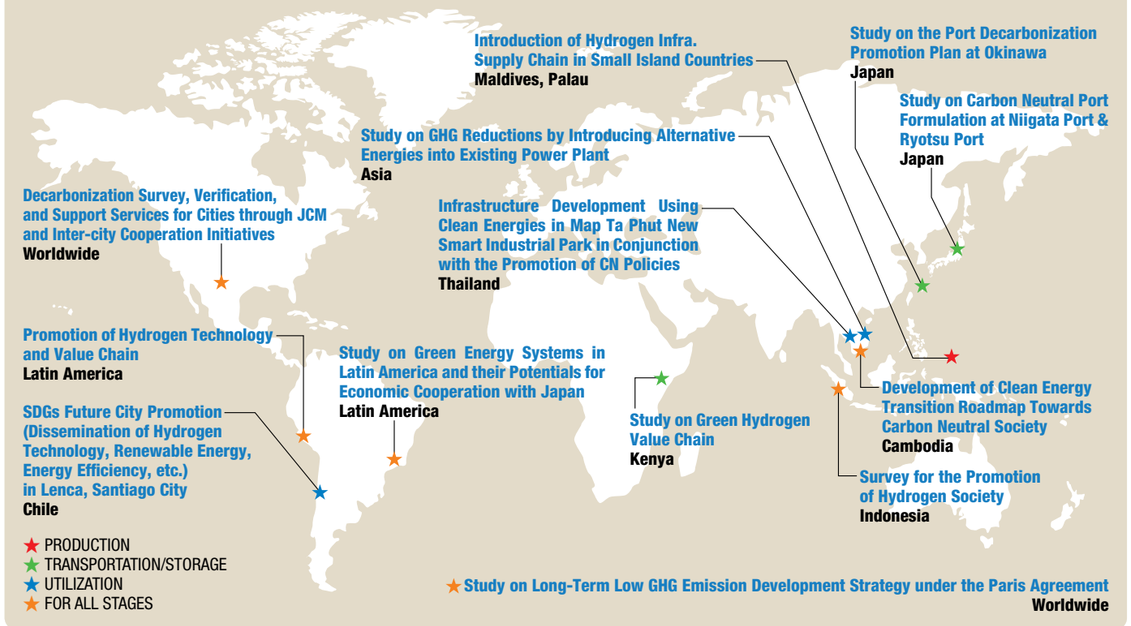
Image of Hydrogen


Meeting towards Carbon-Natural Society, Germany

NK and NKES are responsible for fostering and developing the hydrogen industry in each country by leveraging their expertise in studying global applications of Japanese technology and consulting on renewable energy overseas.  We contribute to the early realization of a hydrogen society and support the development of a sustainable, low-carbon future by offering comprehensive consulting across all phases of hydrogen projects — including production, transportation, storage, and utilization.

Image of Hydrogen Supply Chain Service

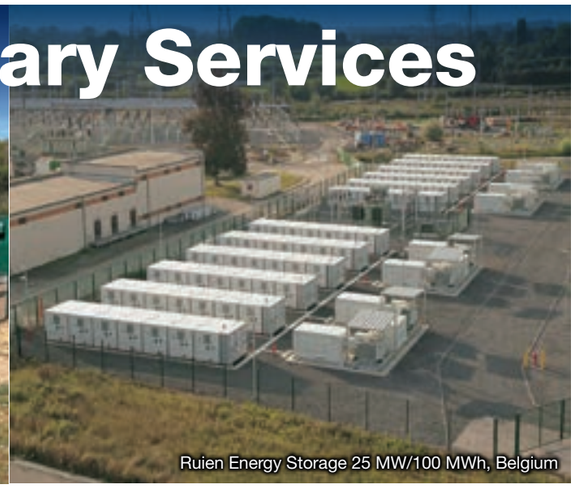
## Selected Project Experience






# Battery Ancillary Services


Tollgate Energy Storage 49.5 MW/49.5 MWh, UK


Ruien Energy Storage 25 MW/100 MWh, Belgium

Engineering and construction management are our core competencies. Nippon Koei Energy Europe B.V. (NKEE) provides one-stop technical services for development, construction, and operation of battery energy strorage system (BESS). We maximize project value throughout the project stages.

The supply and demand of electricity must always be matched; however, in a power grid where a large amount of renewable energy sources have been connected, control is more difficult. Therefore, the need for flexibility of assets is rising.

BESS can be used for versatile applications, such as peak demand shaving, and grid stabilization by providing frequency response.
Battery energy storage is considered the only technology that can be deployed at a large scale in the short term to support flexibility needs, and especially, lithium-ion batteries are commercially competitive.

In Europe, we operate a BESS with a full-merchant business model, which generates revenue from wholesale and balancing service markets.

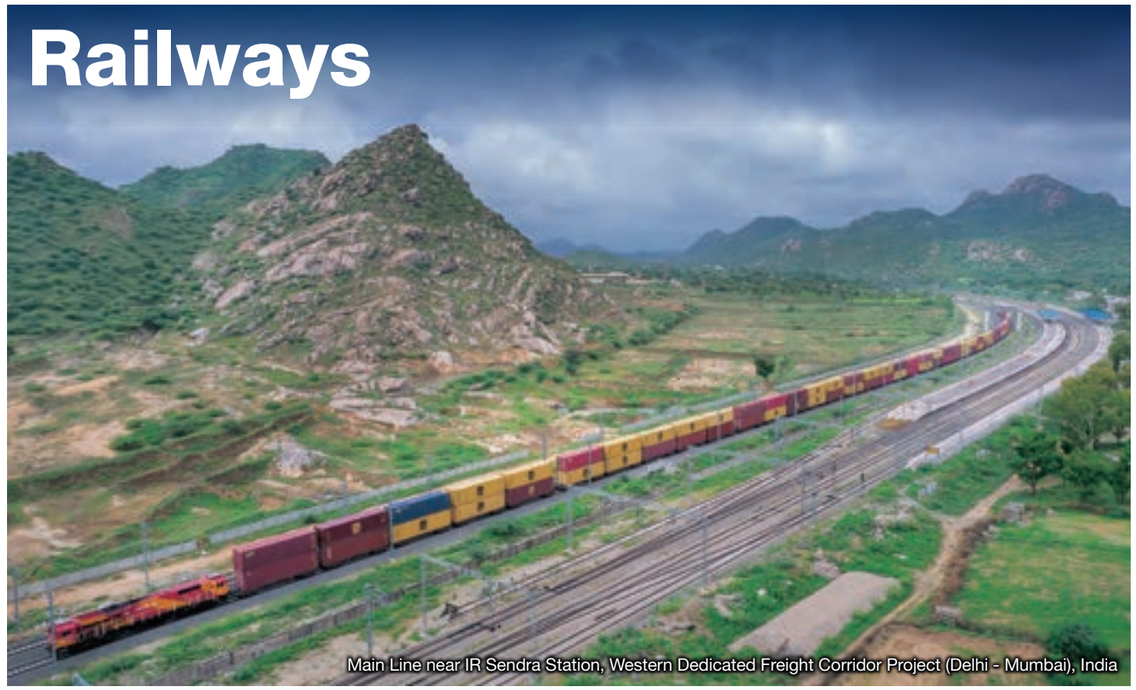
## Selected Project Experience

| Country | Project |
|---|---|
| **Belgium** | Development, Construction Management and Asset Management of 25MW/100MWh Project |
| **Belgium** | Feasibility Study of Two 75MW/300MWh Projects |
| **Belgium** | Development of 75MW/150MWh and 25MW/100MWh Projects |
| **Belgium** | Development of 50MW/100MWh Project |
| **UK** | Development, Construction, and Operation and Maintenance of 49.5MW/49.5MWh Project |
| **UK** | Development, and Construction of 49.5MW/49.5MWh Project |
| **UK** | EPC Construction of 9MW/4.5MWh and 10MW/5MWh Projects |

## About Nippon Koei Energy Europe B.V. (NKEE)

NKEE was established in 2018 to facilitate projects in Europe, where the market development of electricity wholesale and frequency response markets are advanced.
NKEE owns and develops grid-scale BESS projects in the United Kingdom and Belgium. NKEE developed a 49.5 MW/49.5 MWh BESS in southeast England and a 25 MW/100 MWh BESS in the Flanders Region of Belgium. Projects were commissioned and started commercial operations in 2023.

# Railways


Main Line near IR Sendra Station, Western Dedicated Freight Corridor Project (Delhi - Mumbai), India

NK and Nippon Koei Mobility (NK Mobi) provide consulting services for railway projects that enable mass transportation with less energy consumption. Our services encompass intercity and urban railways. For intercity railways, we offer rehabilitation of conventional railway for passengers and freight, development of high-speed railway, and dedicated freight railway services. For urban railways, we offer Mass Rapid Transit (MRT), Monorail, Automated Guideway Transit (AGT), and new transportation modes with Transit-Oriented Development (TOD). These various railways can be game-changers for the regions or countries, addressing social issues such as air pollution related to traffic congestions and regional disparities between urban and rural areas.

## Technical Solutions

- Study
- Planning
- Design
- Tender Assistance
- Construction Supervision
- Operation and Maintenance

## Our Expertise

- Project Management
- Demand Forecast
- Social Environment
- Civil Engineering
- Architecture
- Financial/ Economic Analysis
- Railway Track Alignment
- Train Operation
- Signaling & Telecommunication
- Electricity
- Rolling Stocks
- Contract

## Our Project

### Dhaka Mass Rapid Transit (MRT) Development Project in Bangladesh

NK Group is the first leading engineering consulting firm that conducted the first MRT route in Bangladesh as a General Consultant. Since 2014, in the beginning of the construction, we provided consulting services for the overall project such as civil engineering, architecture, electricity, railway tracks, signaling, telecommunications, and rolling stocks through the phases of basic design, detailed design, tender assistance, operational organization planning, construction supervision, and pre-opening training. For the project implementation phase, we handled Building Information Modeling (BIM) to improve consistency of the project's interfaces.

Dhaka MRT Line 6, the country's first MRT route in Bangladesh, opened on December 28, 2022.




Panama City Metro Line No. 3 Project, Panama


Ben Thanh Station, Ho Chi Minh City MRT, Vietnam


Rolling Stocks in Depot, Ho Chi Minh City MRT, Vietnam


Wall Display at Operational Control Centre, India

## Selected Project Experience


## About Nippon Koei Mobility SDN. BHD. (NKMobi)

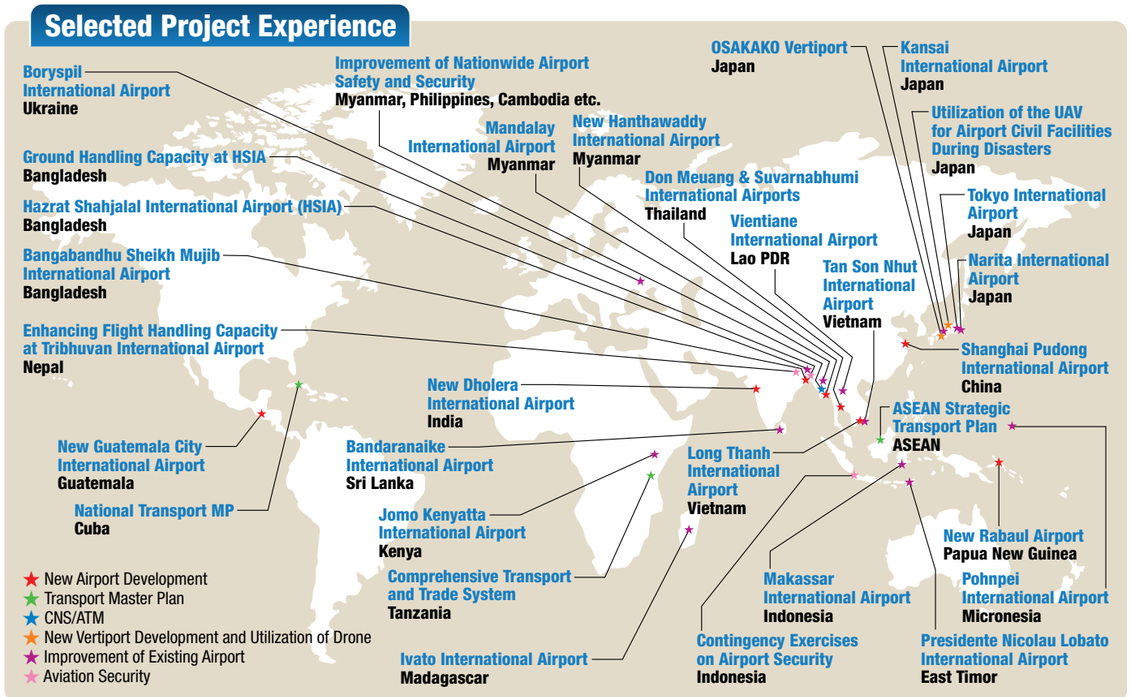
NKMobi is the first Japanese-owned independent railway systems consultancy that brings global expertise to a local market. Its core business expertise lies in systems engineering for land public transportation with a focus on railway, spanning the entire project lifecycle. With strengths in design, system assurance (RAM and safety assurance, verification and validation, requirement management, software assurance, cybersecurity management, EMC, human factor management), system interface and integration, project management and independent consultancy, we provide services across diverse domains, ensuring success at every project stage.

# Airports and Aviation Services

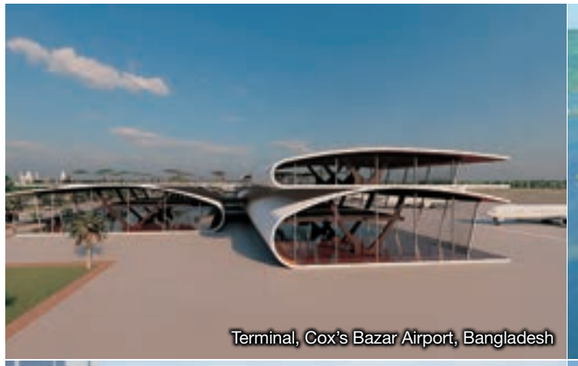
Check-In Counter, Hazrat Shahjalal International Airport Expansion Project, Bangladesh

We provide aviation policy advisory, airport planning, feasibility study, design, construction supervision, and operation & maintenance support services across various aviation-related infrastructure. Our expertise spans runways, airport civil engineering, airport terminal construction, utilities, and aviation security and other facilities related to aviation and airports in a wide range of regions including Southeast Asia, South Asia, Central Asia, the Pacific, Africa, and Latin America.

## Selected Project Experience







Terminal, Cox's Bazar Airport, Bangladesh


Pohnpei International Airport, Miicronesia


Basic and Detailed Design of Osaka Vertiport, Japan


Kansai International Airport, Japan
(Photo: Kansai Airports)

## Our Project ①

### Palau International Airport Operation, Palau

The terminal building of Palau International Airport underwent renovation and expansion from 2019 to 2022. NK participated in this project as a project management consultant and now joins the operation as a shareholder. NK aims to contribute to the sustainable growth of Palau and seeks to provide high-quality consulting services from the perspective of airport facility operators.

## Our Project ②

### OSAKAKO Vertiport Development, Japan

With the 2025 Osaka-Kansai Expo on the horizon, SkyDrive's aircraft is set to take flight, connecting EXPO Vertiport and OSAKAKO Vertiport. NK played a key role in bringing OSAKAKO Vertiport to life – from basic planning and detailed design to construction supervision. NK aims to drive the future of advanced air mobility, offering expertise in vertiport development both in Japan and beyond.

## Our Project ③

### Hazrat Shahjalal International Airport Expansion Project, Bangladesh

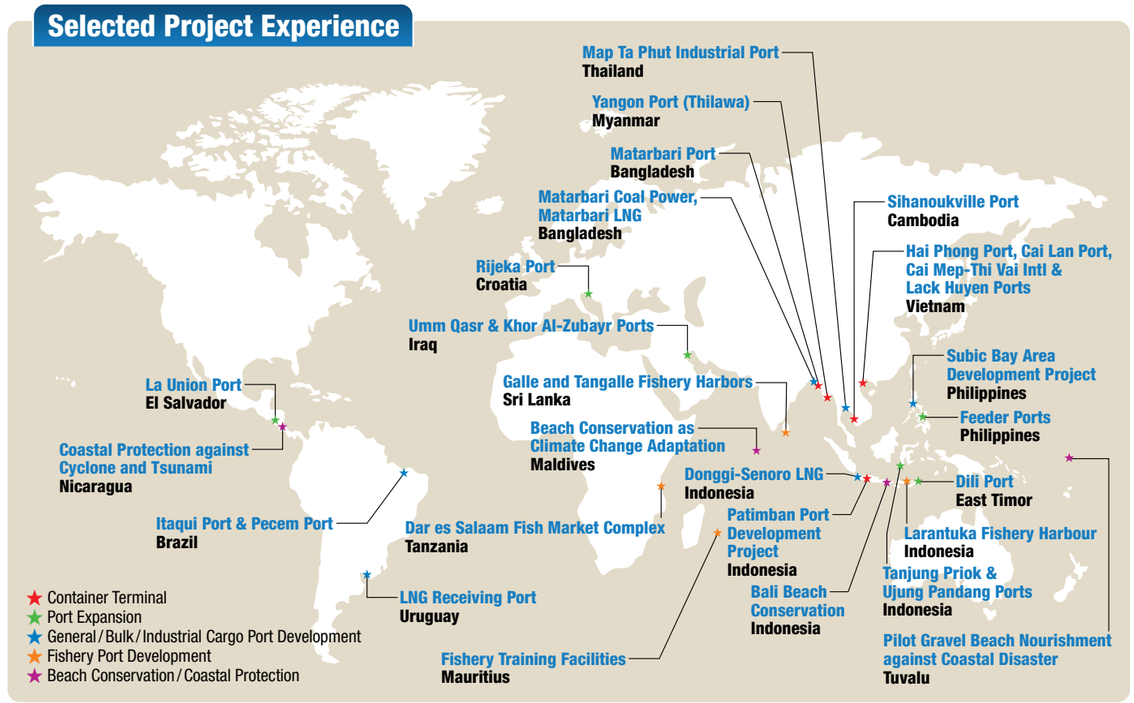
A new third international passenger terminal building (total floor area: 230,000 m2), along with an apron, multi-level car park, access road, and so on, is being constructed at Hazrat Shahjalal International Airport under the Official Development Assistance (ODA) loan to correspond sharply increasing aviation demand in Dhaka. NK leads a four-company consultant JV and had provided detailed design and tender assistance in 2017-2019 and has been providing construction supervision since 2020. Moreover, NK started the Operation Readiness and Airport Transfer (ORAT) consulting services for the authority in 2021 to ensure smooth operational commencement and high-quality airport services. Henceforth, NK will provide one-stop consulting services for aviation infrastructure and operation & maintenance worldwide.

# Ports and Harbors

Container Terminal, Lach Huyen Port, Vietnam

We provide planning, design, and construction supervision services for container terminals, bulk terminals, general cargo terminals, and energy ports such as LNG terminals and new energy terminals (e.g., hydrogen and ammonia). We are also working on the use of BIM/CIM for berth design and efficient 3D structural calculation.

## Selected Project Experience






# Coastal Conservation

Execution of beach nourishment with groin, Nusa Dua, Bali, Indonesia

Well-utilized beach after recovery of sandy beach , Sanur, Bali, Indonesia

We provide planning, design, and construction supervision for coastal projects against coastal erosion due to artificial coastal modification and climate change. We have accumulated many years of experience of coastal projects and provide high-quality consulting services.

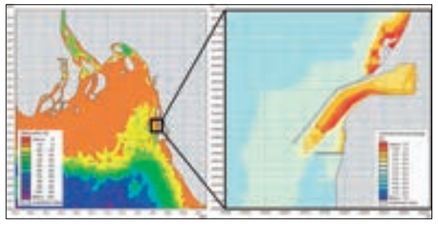
Before Gravel Nourishment, Mauritius

After Gravel Nourishment, Mauritius

## Our Technology ①

### Sedimentation Simulation

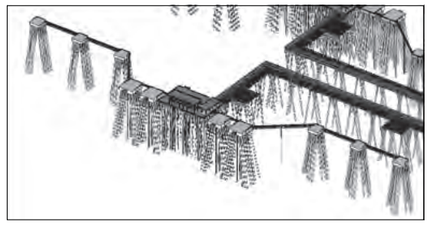
Sedimentation simulation for navigation channels is conducted as needed in port planning and design. These simulations support effective facility design and dredging plan. Our company has in-house experts and continues research and development to improve predictive accuracy.



## Our Technology ②

### 3D Structural Calculation

Company-wide development of DX technologies has been advancing. In the port sector, 3D structural calculation is also applied to port structures design. In addition, efforts are underway to automate 3D model generation and quantity calculation.



# Bridges


Bago River Bridge Construction Project, Myanmar

NK's bridge engineering expertise is second to none, with experience ranging from short-span, low-clearance bridges to long-span, high-elevation, structurally complex bridges crossing great rivers and straits, and congested junctions in urban areas. We have designed and built hundreds of bridges all over the world.

## Types of Service

- **Structural planning** – We propose optimum structures and erection plans by carefully assessing fundamental conditions and local constraints.
- **Numerical analysis** – We utilize advanced methodologies, including FEM analysis for steel and concrete structures, and conduct comprehensive seismic evaluations that account for the effects of soft ground conditions.
- **BIM (Building Information Modelling)** – We integrate BIM technology to design and manage bridge projects, creating 3D virtual models that consolidate all project data. These models also support landscape design, enhancing aesthetic and environmental integration.
- **Innovation in Technology and Construction Methods** – In collaboration with leading universities, we pioneer cutting-edge technologies to enhance seismic performance, such as damage-free seismic isolation mechanisms.

## Our Project

### The Project for Construction of New Thaketa Bridge, Myanmar

The roadway has been made safer and more secure by improving the road configuration and increasing the width of the roadway and shoulders in conjunction with the new bridge replacement. This upgrade, wherein it lifted weight restrictions and expanded the road to four lanes, has helped relieve chronic traffic congestion and improve logistics efficiency. In addition, the active introduction of Japanese technologies such as pre-stressed extra-dosed bridges and steel pipe sheet pile well foundations, as well as the implementation of a technology transfer program, contributed to improving the skills of Myanmar engineers.




Mombasa Gate Bridge Project, Kenya


Kampala Flyover Construction Project, Uganda

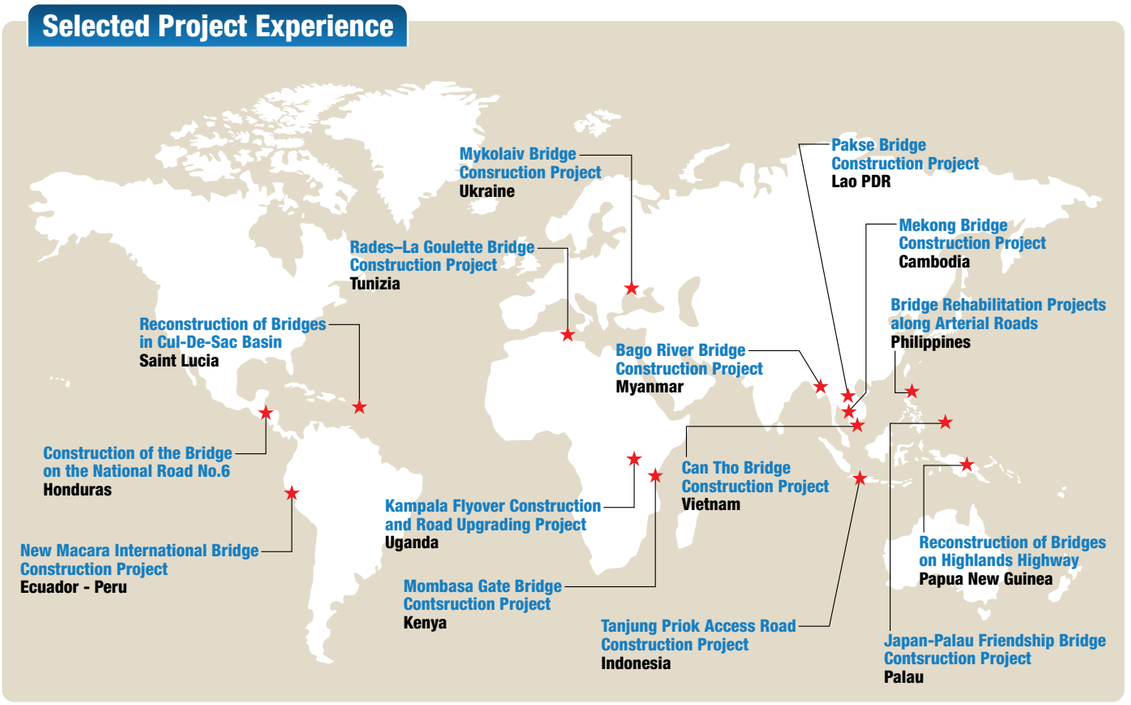

New Macara International Bridge, Ecuador - Peru


Meghna-Gumti Bridges Construction Project, Bangladesh

## Expertise

- **Bridge types**: concrete bridges, steel bridges, arch bridges, cable-stayed bridges, etc.
- **Recognition**: Recognized for exceptional application of technology, engineering and aesthetic quality and safety.
- **In-depth Database**: We maintain our own database of seismic activity, natural disasters, and weather conditions around the world including design capabilities of local firms.
- **Advanced Tools**: We use our own technical skills for design with advanced methods such as 3D analysis, finite element method, dynamic analysis, and landscape simulation technology to create aesthetically bridges.

## Selected Project Experience



# Roads and Highways


Tanjung Priok Acccess Road Construction Project, Indonesia

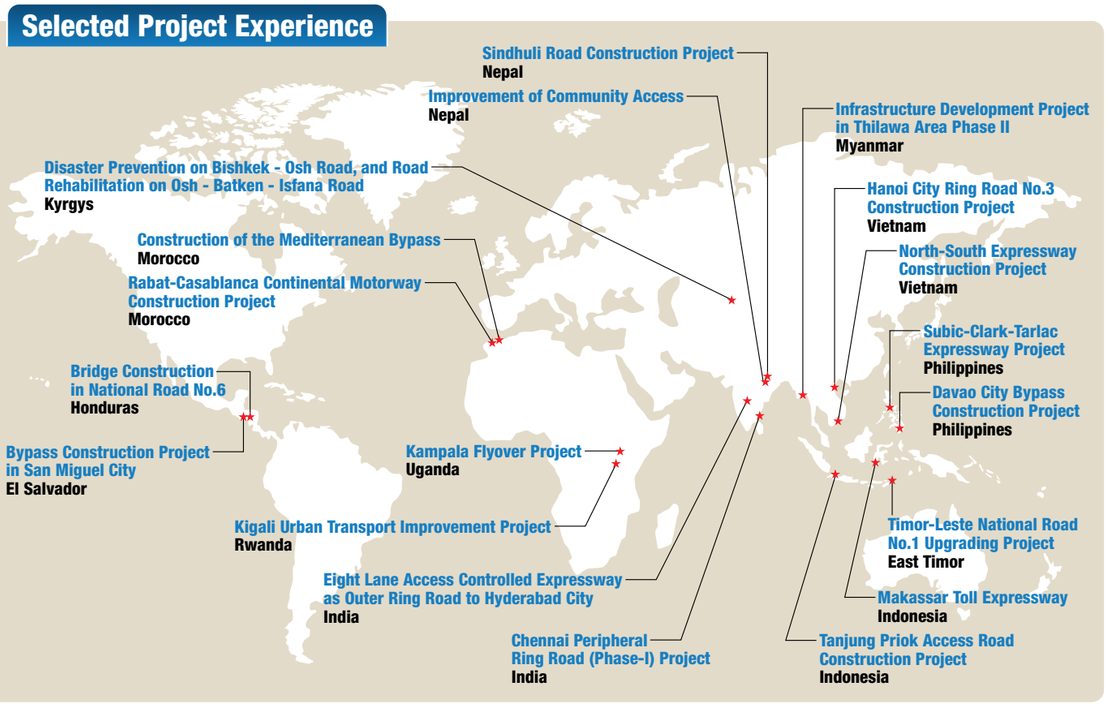

San Miguel City Bypass Constructiion Project, El Salvador


Construction Supervision for Construction of Hyderabad Outer Ring Road, India

We provide a wide range of expertise and services, including road development master plan studies, feasiblity studies, detailed engineering designs, construction planning, cost estimates, construction supervision, as well as quality control and sustainable environmental considerations. Also, we are working on O&M planning considering public-private partnerships (PPP) scheme to utilize private sector technology, know-how, and ingenuity.

Also, we are advancing digital transformation (DX) by developing intelligent and sustainable management systems that seamlessly integrate data across the entire project scope. By leveraging AI, IoT, and cloud-based platforms, we enhance real-time data sharing, optimize centralized and automated management, and enable swift decision-making. Additionally, we incorporate Green Infrastructure principles by integrating digital tools that promote environmental resilience, sustainable asset management, and carbon footprint reduction.

## Selected Project Experience






# Intelligent Transport Systems (ITS)

Variable Information Board in Bangalore, India


ITS Center in Hyderabad, India

We provide ITS technology to allow mega-cities to address their transport problems such as chronic traffic congestion and accidents, air pollution, inadequate capacity of public transportation services, and poor logistics.

## Selected Project Experience

| Country | Project | MP* | TMS* | HTMS* |
|---|---|---|---|---|
| **Indonesia** | Tanjung Priok Access Road Construction Project Phase I | | ● | ● |
| **Vietnam** | North-South Expressway Construction Project (HCMC - Dau Giay Section) | | ● | ● |
| **India** | Introduction of ITS on Road Network in Hyderabad Metropolitan Area | ● | ● | ● |
| **India** | The Master Plan Study on the ITS in Bengaluru and Mysore | ● | | |
| **Brazil** | Introduction of Intelligent Transport Systems | ● | | |
| **Kenya** | Project for Implementation of ITS in Mombasa Region | | ● | ● |
| **Worldwide** | Implementation Support and Follow-up for Knowledge Co-Creation Program “Practical Technology on ITS” | | ● | ● |

*Notes: MP = ITS Mater Plan, TMS = Toll Management System, HTMS = Highway Traffic Management System

## Our Project

### Sindhuli Road Project in Nepal

We were consistently engaged from the start of the feasibility study in 1986 through all phases of basic planning, detailed design, and construction supervision.

In order to build a safe road in extremely severe natural conditions, such as fragile geology with frequent heavy rainfall and landslides, steep mountains with elevation differences of up to 1,000 m, and steep bedrock slopes along rivers, we overcame these difficulties by combining the best of mountain road construction technology, while also taking environmental conservation into consideration.

The reliable construction technology minimized damage to the road in the major earthquake that occurred in April 2003, where shortly after the quake, the entire line was opened to traffic, and the road played a major role as a trunk road in the rescue and transport of relief supplies after the earthquake.

# Tunnels

Davao City Bypass Construction Project, Philippines

NK together with its tunnel specialist subsidiary Nippon Civic Consulting Engineers (NCC) are leaders in the field of tunnel engineering and engineering solutions to natural obstacles, offering total tunnel solutions all over the world. It is noteworthy that our tunnels in Japan survived without any major damage during the massive Tohoku and Hanshin earthquakes.

At the planning stage, we identify possible construction methods (NATM, shield, open-cut, and submerged), compare and select the most appropriate method, and at the design stage, we perform the selection of appropriate support structure, analysis and structural calculations to verify auxiliary construction methods and effectiveness in vulnerable areas, selection of tunnel entrance locations, construction planning, and landscape design. We also plan ventilation, lighting, and emergency facilities, as well as periodic inspections and repair plans to ensure safe tunnel use. If it is difficult to plan a new tunnel, we are also involved in all aspects of underground structures, such as proposing renewal plans to widen tunnels while maintaining in-service traffic.

## Our Project

### Nagdhunga Tunnel Construction Project, Nepal

Since March 2017, we have been providing consulting services for detailed design, bidding support, construction supervision, and capacity building for O&M for the Nagdhunga Tunnel Construction Project. The tunnel is 2,688 m long with two lanes of two-way traffic, and is paralleled by an emergency evacuation tunnel (small section tunnel).

Although the site was in a unique environment where the ground moved easily and the bedrock was very fragile, ground movement was measured and analyzed, an efficient excavation plan was developed and progressed, and penetration was completed in April 2024.

The Nagdhunga Tunnel is being constructed as the country's first full-scale road tunnel equipped with emergency facilities and ventilation systems. However, the Nepalese government has no experience in O&M of road tunnels. We provide support for the establishment of systems and O&M know-how to properly operate and maintain tunnel facilities over the long term and into the future.

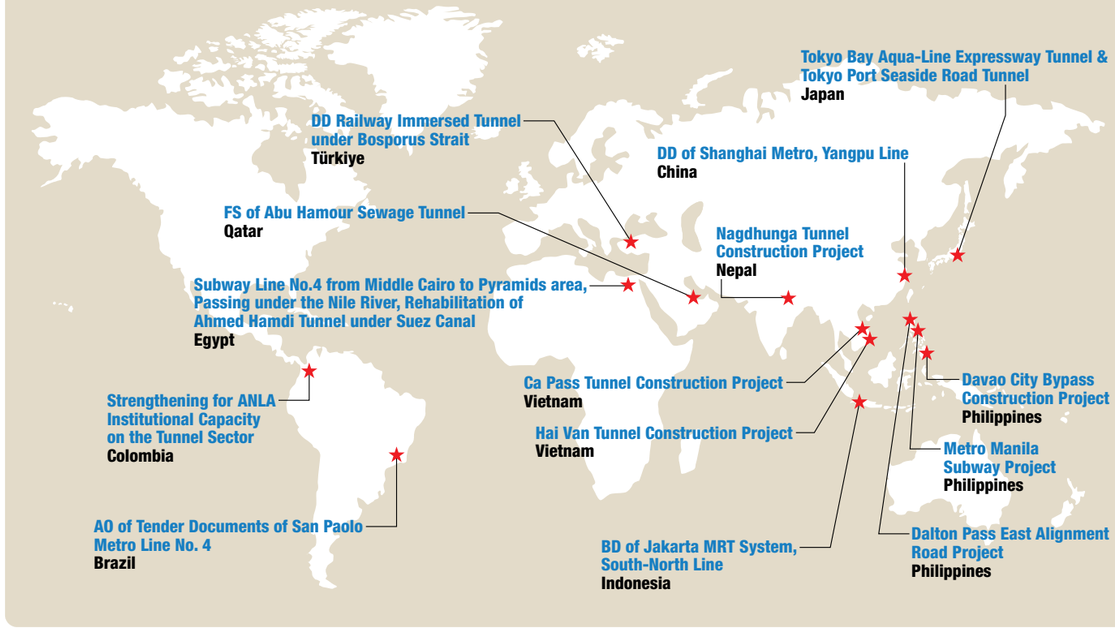



Tokyo Rinkai Immersed Tube Tunnel, Japan


Route 357, Tokyo Port Tunnel, Japan


TBM Tunnel, Ho Chi Minh City MRT, Vietnam

## Selected Project Experience




## About Nippon Civic Consulting Engineering Co., Ltd. (NCC)

For over half a century, NCC has worked in countless tunnel projects for roads, railways, underground reservoirs, waterways, drainage, common ducts, and pipelines across Japan, Asia, Europe, and Africa.

We cover all project phases from the design of tunnel management systems and traffic control equipment for securing user safety and smooth traffic operations in the vicinity of the tunnel and the wider road network.

We also provide rational repair and reinforcement of existing tunnels to extend their economic lifespan. We are active in research and development for the continual advancement of the technology used in the construction.

# Infrastructure Maintenance and Management


Training Program for Inspectors


Repair Pilot Project

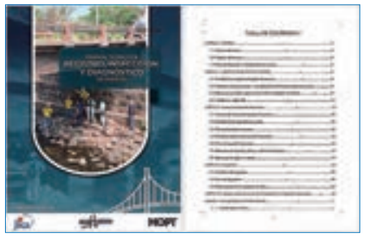
BMS and APP

We address key issues in bridge and culvert maintenance and management to ensure the sustainability of the local infrastructure management system. This includes developing the Inspection, Diagnosis, and Repair Manual, building the Bridge Management System (BMS), implementing pilot repair projects, and training inspectors. In El Salvador, we introduced Japanese procedures and compared them with existing practices, while Japanese experts and professors supported this effort through lectures, OJT, workshops, and seminars.

## Our Technology ①

### Bridge/Culvert Inspection and Diagnosis and Technical Manual

By providing the Technical Manual on Inspection and Diagnosis, it will become possible to quantitatively assess the condition of bridges and culverts, enabling implementation of appropriate maintenance and management measures. OJT will be conducted at the pilot site. Through this OJT, the manual's content will be further refined and improved to enhance its practicality. Continuous updates to the manual after the project's completion, along with the inspector training program, will ensure the proper maintenance and management of bridges and culverts for decades ahead.



## Our Technology ②

### BMS Application

The BMS application is compatible with smartphones and tablet devices, enabling users to input and access bridge/ culvert specification information and inspection results. Tailored to local needs, it provides asset management functions for administrators, including prioritization lists, cost estimation sheets for conservation measures, and investment management lists. These features facilitate the development of efficient and strategic maintenance and management plans based on inspection results.



# Transportation Planning


Image of GIS Powered Transportation Planning and Logistics Optimization

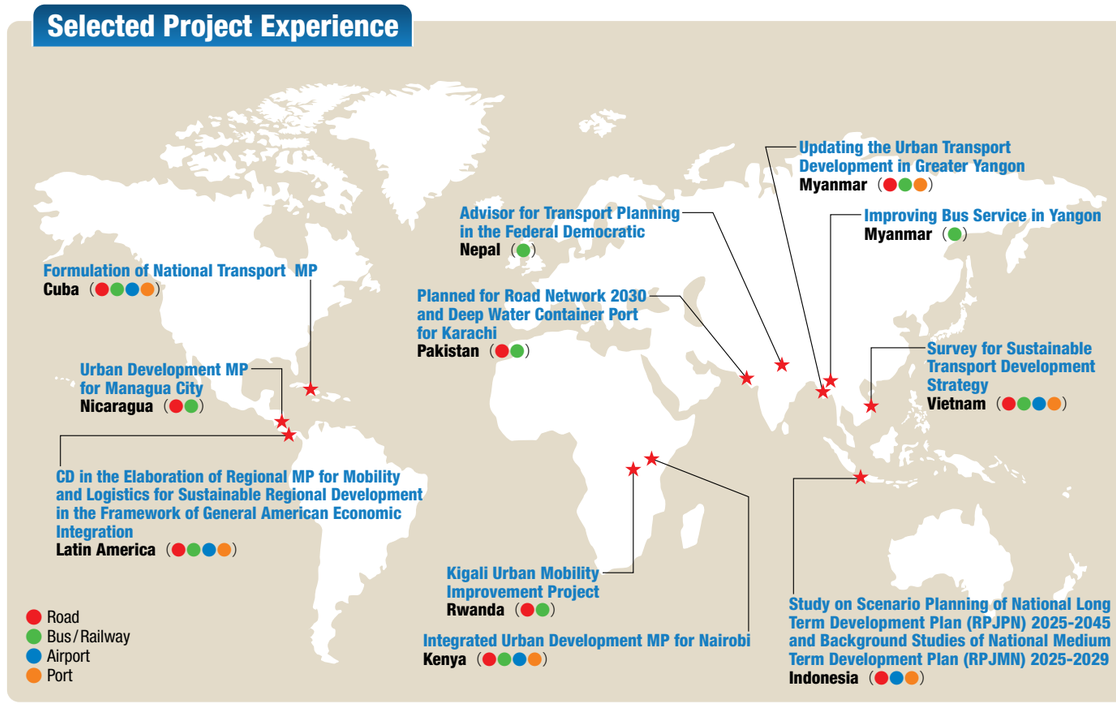

Image of Transportation Planning with Tablet Device


Workshop with Local People regarding Public Transportation Planning

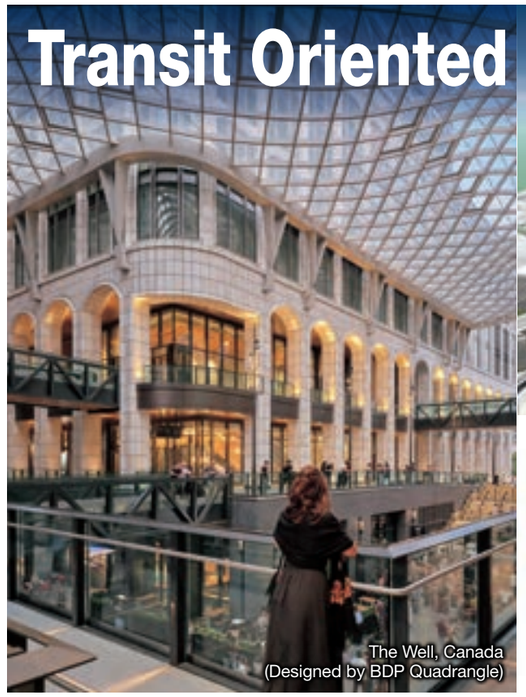
NK's traffic planning expertise covers technical fields related to traffic measures, including traffic volume surveys and estimates, urban traffic management (traffic safety and facilitation measures), intelligent transportation systems (ITS) utilization planning, public transportation planning, automated driving demonstration experiments, big data analytics of human flow and logistics, and Mobility as a Service (MaaS) initiatives.

In the field of public transportation planning, NK designs, develops, and operates databases and systems—mainly for rail, bus, and maritime transport—to continuously maintain and update transport data. These efforts support the implementation of public transportation projects, enhance operational efficiency and management stability for operators, encourage modal shift from private vehicles to public transport, and contribute to tourism revitalization.

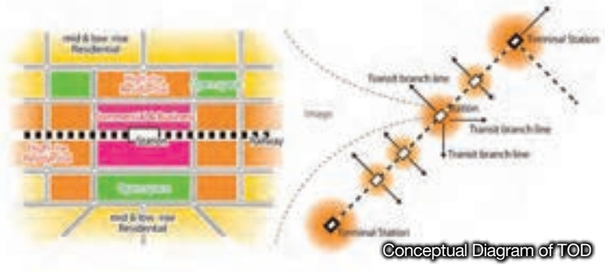
## Selected Project Experience



# Transit Oriented Development (TOD)


The Well, Canada
(Designed by BDP Quadrangle)

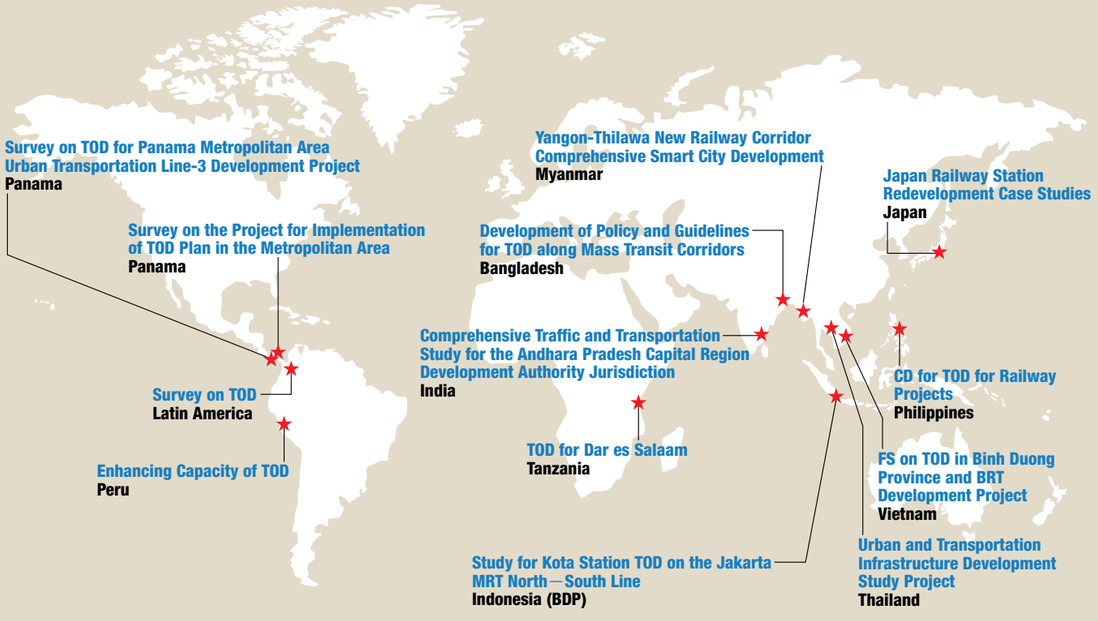

Urban Redevelopment in Bang Sue Station Area, Thailand


Conceptual Diagram of TOD

Mass Rapid Transit systems are being built in major cities of developing countrie. However, in order for public transport to become the primary mode of trips, it is necessary to increase the convenience and accessiblity of public transport.

Under the concept of TOD, we are preparing development concepts, zoning plans, public urban facility plans such as station plazas and access roads, redevelopment plans including architectural design, and studies of development methods for areas around the stations to encourage the use of public transport and to create synergies with the revitalization of the surrounding areas.

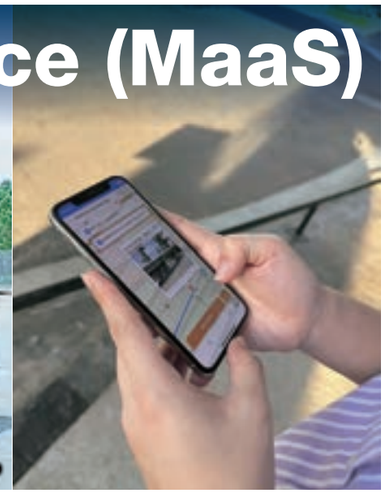
## Selected Project Experience






# Mobility as a Service (MaaS)


On-demand Transport Service



We seek to contribute to the coordination of Mobility as a Service (MaaS) that ensures the health, safety, and well-being of urban residents and visitors. In doing so, it aspires to embody the concept of “co-creation and enhancement of high-quality physical environments and virtual multimodal services”.

The concept of MaaS integrates information dissemination, reservations, and payments, which were previously managed separately by individual transportation operators, into a unified, one-stop service for public transportation. Nippon Koei’s services aim to address a wide range of urban transportation challenges by incorporating this MaaS framework.

In particular, we are engaged in advanced initiatives aimed at developing MaaS platforms, viewing the worsening traffic congestion and deteriorating living environments, especially in emerging countries experiencing rapid urbanization and motorization, as critical challenges, and recognizing the widespread adoption of digital technologies as a valuable opportunity.


Township MaaS

## Selected Project Experience

| Country | Project |
|---|---|
| **Singapore** | Jurong Lake District IMDA Open Innovation Challenge for LTA: Nudging the Population to Go for Car-Lite and Active Mobility Choice using a Data Driven Digital Technology and the MaaS Mobile Application |
| **Malaysia** | MaaS Project in Kuala Lumpur by Multi-model Integration between Mass Transit and Feeder Transport |
| **Cambodia** | Siem Reap Tourism-Oriented MaaS Busin |
| **Indonesia** | Indonesia Multi-tenant Transportation Payment Platform Planning Project |
| **Indonesia** | Collaboration for the Enhancement of MaaS Business in Jakarta and the Co-creation of the MaaS Data Insight Business with PT Jakarta Lingko Indonesia |
| **Indonesia** | Data Insight Generation for City-wise PublicTransport Service Improvement |
| **Vietnam** | Demonstration of MaaS in a Large-Scale Private Area Development |

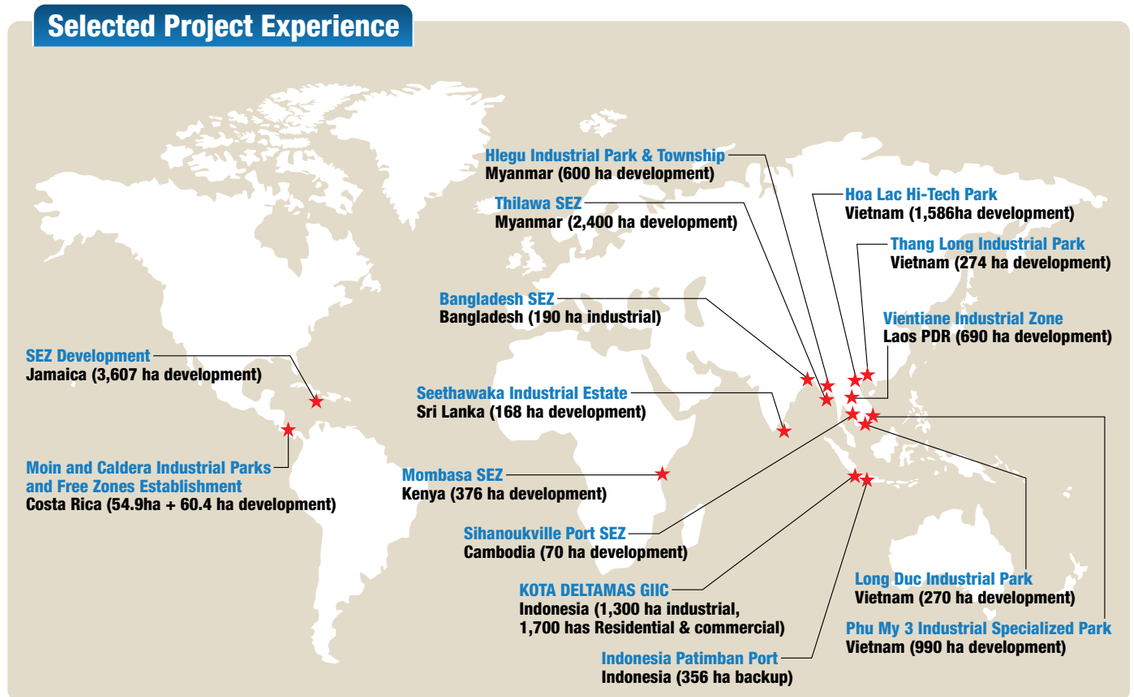
# Industrial Parks and Special Economic Zones (SEZ)


Patimban Port, Indonesia

Our services for the development of industrial parks and special economic zones (SEZ) include planning, design, construction supervision, maintenance, environmental and labor-related issue management, as well as the formation of detailed marketing and promotion strategies to attract private sector investors, including Japanese manufacturers. We also prepare internal regulations such as effluent standards, architectural guidelines, and infrastructure development rules.

In addition, we also provide comprehensive infrastructure development services covering all essential sectors, including earthworks, roads, drainage, water supply, sewerage, electricity, and communication systems.

## Selected Project Experience





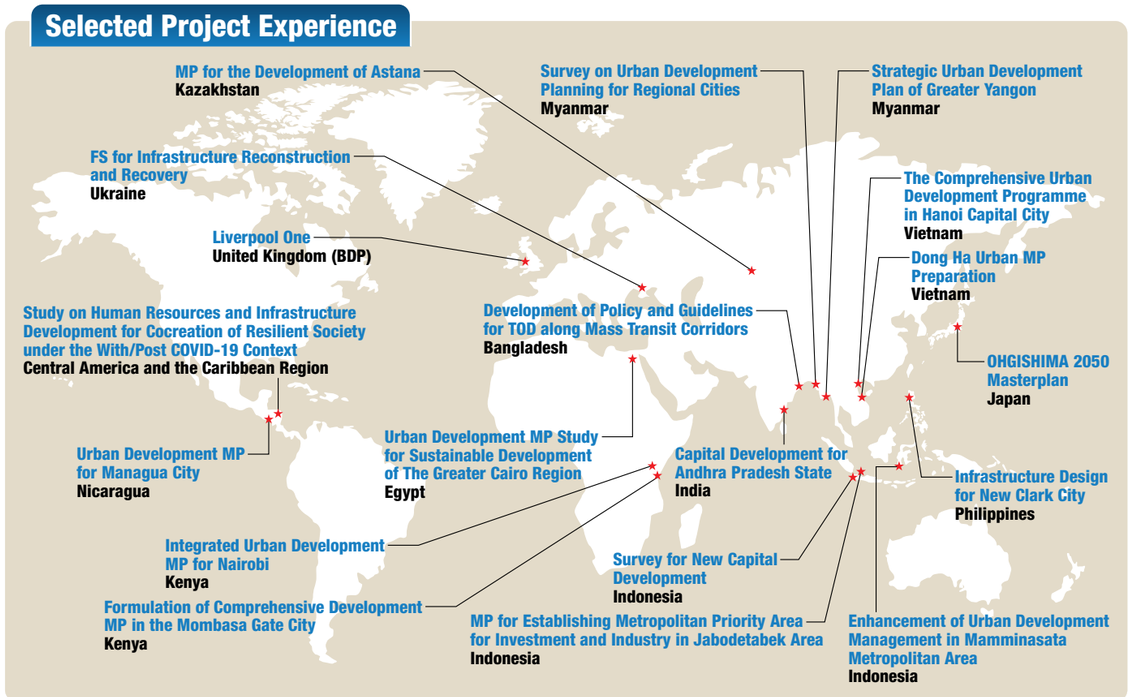

# Urban Planning


OHGISHIMA 2050 Masterplan, Japan
(Conceptual Plan by NKUrban with support from BDP and NK)
Source: JFE Holdings, Inc.

Urban planning is essential for sustainable development in all over the world, as it helps manage rapid urbanization, improve living conditions, and support economic growth. Effective planning ensures access to housing, transportation, and essential services while promoting environmental sustainability. Additionally, it enhances disaster resilience, creating safer and more livable cities for future generations.

We supports the sustainable development of cities through data collection and analysis, vision formulation, urban structure planning, project development, and urban management, underpinned by coordinated system, capacity building, and guidelines formulation.

## Selected Project Experience



# Smart City


New Clark City, Philippines

We support the development of smart cities (both in Japan and overseas) that incorporate AI, IoT, and other technologies into city planning to improve the quality of life of citizens and the efficiency of urban activities. We aim to realize “Good City” by promoting comprehensive urban data analysis, conducting behavioral analysis and applying nudges to people in the city, and implementing data-driven urban design solutions.

## About the “Good City”

The Good City is an initiative launched by NK and BDP to help cities across the world become better. It brings together our designers, urbanists, engineers, environmental scientists, and technologists to provide a package of services targeted at cities and municipal authorities.
Of course, cities vary hugely in their size, function, culture, and geography but they all face the following ten issues even if the solutions may not always be the same. We bring together design and advisory services to address these issues, from urban regeneration and spatial planning to civil engineering and transport infrastructure.

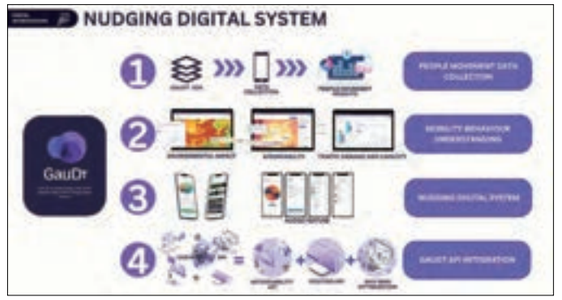
## Themes

| Issues of cities | Our views |
|---|---|
| Bringing people together | The primary function of cities is to bring people together.<br>In a world of social media and online meetings, face-to-face contact still matters. |
| Getting around | The Good City needs to move people around efficiently.<br>A city is too big for all of this to be done via walking and cycling, the Good City needs efficient public transport and a plan for cars. |
| Well designed | Every aspect of the Good City is designed; from its strategic and neighbourhood plans, to its buildings, transport systems, infrastructure, public realm, lighting, street furniture and interiors. |
| Clean and non-polluting | The scale and intensity of cities puts strain on natural systems as well as impacting on public health.<br>The Good City should have clean air and rivers and be efficient at disposing its waste. |
| Zero carbon | Cities accommodate 56% of the world’s population but are responsible for 70% of its $CO_2$ emissions.<br>The Good City must therefore be zero carbon ready. |
| Quality of life | The primary role of the Good City is to provide its people with a good place to live in communities that are diverse and supportive, healthy and safe. |
| Nature based solutions | The Good City is a green city providing healthier, more biodiverse, climate resilient, equitable places to live and work that contribute to a sustainable city. |
| Resilient | In a changing world the Good City must be resilient, able to cope with both gradual change and extreme events caused by climate change or other natural or human-made disasters. |
| Flexible and responsive | The future is unknown so the Good City cannot just be optimised to deal with today’s conditions, it must be able to flex and evolve to deal with whatever tomorrow brings. |
| Prosperous + successful | The Good City is a prosperous city that provides a living to its citizens and contributes to the success of the national economy. |



## Our Technology ①

### GauDT Platform – Mobility Data




As our urban systems grow increasingly complex, advanced integrated solutions using diverse urban data are needed to empower strategic planning for smart and sustainable cities.
With our MaaS platform GauDT, we aggregate and analyse mobility data so key decision makers responsible for urban mobility have access to insights that will support policy and planning decisions.
This valuable information can help cities with their transport and sustainability goals:

**Reduced traffic congestion**: By encouraging the use of public transportation through the MaaS app, it will help alleviate traffic congestion.
**Data collection and analysis**: Transportation patterns and user behaviour can help government agencies with transportation policy and planning decision-making.
**Improving air quality**: Encouraging sustainable transportation choices such as electric vehicles can reduce air pollution.
**Multi-modality**: MaaS app can support the creation of a more efficient and integrated transportation system making it easier for passengers to transition between different forms of transport.
**Assists commuters**: MaaS app makes it easier for passengers to use transport systems with real-time information, assess cost-effective travel journeys, and choose eco-friendly transportation options.

## Our Technology ②

### Framework of Smart and Healthy City

The smart and healthy city is one that continually creates and improves physical and social environments and expands community resources, enabling people to mutually support each other in performing all the functions of life and developing to their maximum potential. The Healthy City framework, developed by ID&E (NK, NKBP and BDP) is a data-driven, actionable framework to enhance urban health.

**01** Comprehensive Urban Health Analysis
The analytical phase establishes a foundation by identifying gaps in amenity access and their health impacts, producing actionable insights.
Methodology:
Data Collection & Processsing → Correlation Analysis → Simulation Modelling → Insight Generation

**02** Behavioral Nudge Integration via Digital Platforms
The nudge tool and apps then operationalize these insights at the individual level, subtly steering people toward healthier behaviors (e.g., walking instead of driving) within the existing or improved urban context. NK team partnering with LTA sets out to prove the concept of using the behaviour nudge theory using a data-driven digital technology that also enables participation from the MaaS mobile application ecosystem.

**03** Data-driven Urban Design
Finally, the data feeds back into urban design/ planning, ensuring that long-term planning reflects both the initial analysis and the behavioral outcomes observed, creating a feedback loop for continuous improvement.
- Walkability with PPP Park at Central Area
- Walkability with Historical & Cultural Area Rejuvenation


MaaS Mobile Application


Meji Park, Japan
Utilize DX Equipment to Improve Management and Operations

# Urban Design and Architecture


Liverpool One, Liverpool, UK
(Copyright : Grosvenor / Photo: Jason Hawkes)

NK together with Nippon Koei Urban Space (NK Urban), BDP, and Kisho Kurokawa Architect & Associates (KKAA) are positioned internationally to provide design solutions for urban planning and development, offering engineering consultancy with architectural services.
Also, we provide consultancy services to formulate a master plan for cities and regions to keep a sound and sustainable development and to build disaster-resistant regions.

## Sector Coverage

- Education
- Healthcare
- Heritage
- Housing
- Leisure and Culture
- Retail and Mixed Use
- Science, Research, and Technology
- Sport
- Transport
- Urbanism
- Workplace
- Media Environments

## Services

- Architecture
- Urban Design and Town Planning
- Civil and Structural Engineering
- Building Services Engineering
- Interior and Graphic Design
- Lighting
- Acoustics
- Sustainability
- Design Management
- Digital Design
- Inclusive Design
- Landscape Architecture

## Our Project

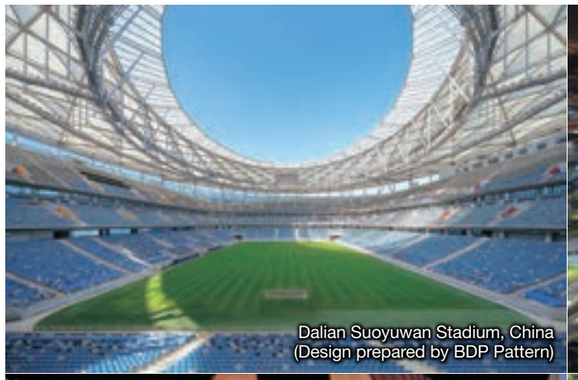
### Palace of Westminster, UK


(Copyright / Photo: Olavs Silis)

BDP has been awarded the full interdisciplinary contract for client advisory services to help ensure the safe and secure future of the Palace of Westminster. The interdisciplinary appointment is for architecture, civil and structural engineering, building services engineering, interior design, landscape architecture, lighting design, acoustics and planning.

The Palace of Westminster is a Grade I listed building and one of the most iconic and significant buildings in the world. Together with Westminster Abbey and St Margaret's Church, it is part of the UNESCO Westminster World Heritage site. Because of the size and layout of the Palace, it is thought to be the biggest and most complex renovation programme ever undertaken in Europe.




Dalian Suoyuwan Stadium, China
(Design prepared by BDP Pattern)


Ahmad Bin Ali Stadium, Qatar
(Design prepared by BDP Pattern)

Indonesian Pavilion at Osaka EXPO, Japan
(Building work managed by NKUrban)


Yoko Onsen, Vietnam
(Design prepared by Nippon Koei Vietnam, NK, and KKAA)

## About Nippon Koei Urban Space Co., Ltd (NKUrban)

NKUrban was established in 2022 building on the legacy of Tamano Consultants, which was founded in 1951, to provide a one-stop service that integrates civil engineering and architectural expertise, as well as to expand business in the urban and spatial development market both in Japan and overseas. NKUrban provides comprehensive research and consulting services related to urban space and infrastructure development.

Partnering with the experts of the BDP Group and utilizing the extensive ID&E Group network, NKUrban will respond to the demand for urban development both in Japan and overseas. Together, we aim to become a comprehensive business production company with greater proposal and development capabilities than ever before.

## About BDP

BDP is a leading global, multidisciplinary design practice united by a shared purpose: to design a world that is built for good. For more than 60 years, we have been solving problems, creating innovative spaces, and pushing the boundaries of what is possible.

Our diverse and international team of experts, including architects, engineers, designers, and urbanists, works closely with our clients, users, and communities to craft spaces for living, working, learning, and leisure across the globe. With studios spanning the UK, Ireland, Europe, Asia, and North America, our reach is as broad as our expertise.

Whether designing homes, workplaces, or public spaces, at BDP, we always put people at the heart of our thinking, ensuring that the environments we create are not just functional, but also inclusive, beautiful, and socially and environmentally responsible.

## About Kisho Kurokawa Architect & Associates (KKAA)

Since joining Nippon Koei Group in January 2015, KKAA has inherited the brand established of its founder, Kisho Kurokawa, and performed actively in design activities both domestically and internationally.

Our recent portfolio includes projects such as the New Headquarters of Nippon Koei, Embassy of Indonesia in Japan, Fukaya Terrace Market and Restaurant, the Expansion and Renovation of Fukui Prefectural Dinosaur Museum, the Expansion of the Embassy of Japan in Poland, and the Renovation of Hiroshima City Museum of Contemporary Art.

KKAA remains committed to responding to the evolving needs of our clients, further creating a new era based on the concept of "symbiosis" developed by its founder.

# Data Center Consulting








We can provide overall architectual and engineering services for Data Center Construction including related facilities and value added technology such as resilience, sustainability, and carbon neutrality.

## Solution Provision Process

| Surveys/ Basic Planning | Basic/Detailed Design | Construction | O&M |
|---|---|---|---|

**SDGs/Sustainability Consulting**

**Project Management/Quality Management**

**Design Management** — **Construction Management**

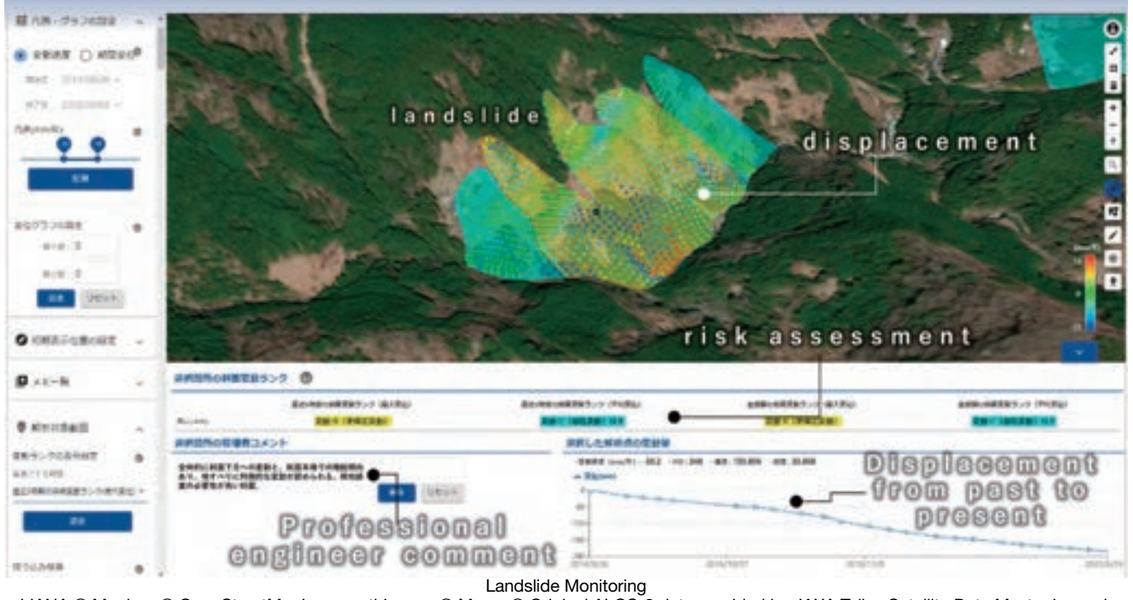
| | | | | |
|---|---|---|---|---|
| Needs Survey, Maintenance Concept Preparation | BIM/ CIM Management | | | Risk reevaluation and countermeasures |
| Basic Design<br>Building planning (design, structure, exterior), equipment and device usage settings, energy conservation and renewable energy planning, environmental assessment and measures, etc. | Environmental Impact Assessment | Licensing and other administrative procedures | Order processing support<br>Preparation of order documents, construction cost estimation, contractor selection, etc. | Earthquake resistance diagnosis, equipment/ energy saving diagnosis |
| | Surveying and geotechnical investigation | Civil engineering facility design | | BCP creation for disasters and pandemics |
| | Architectural design (general and structural) | Traffic impact assessment and planning | Construction Supervision | |
| Location Selection<br>Access control, site acquisition, site evaluation (tax regulations and incentives, various administrative standards, risk assessment and countermeasures, land and infrastructure facility condition arrangements, etc.) | Electrical/ mechanical facility design | Construction plan/ project cost calculation | | Disaster prevention training (including anti-terrorism measures) |
| | Substation design | Foundation design | | |
| | Information and communication design | Environmental impact simulation | | Monitoring using satellites, sensors, etc. |

## Selected Project Experience

| Country | Project | IT Load (MW) | Tier | Services | Planning Study | Design | Construction Support | Technical Review |
|---|---|---|---|---|---|---|---|---|
| **UK** | Project Inspire- Porton Down Data Centre Campus | <30 | 3 | Arch & Eng | ■ | ■ | ■ | |
| **UK** | Merseyside Police Operational Command Centre | <30 | 3 | Arch & Eng | ■ | ■ | ■ | |
| **Indonesia** | Single-tenant user Critical Facilities Campus with Data Centre Master Plan | <45 | 4 | Arch | ■ | ■ | | |
| **China** | Shenzhen Stock Exchange Data Centre Campus Master Plan | >60 | 3 | Arch | ■ | ■ | | |
| **Japan** | High-Tech Logistics and Data Centres Industrial Park Master Plan | >90 | 4 | Arch | ■ | ■ | | |
| **Singapore** | High Density Racks Hyperscale Data Centre | >90 | 3 | Arch | ■ | | ■ | ■ |

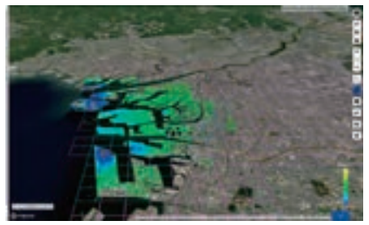


# Satellite Information Services

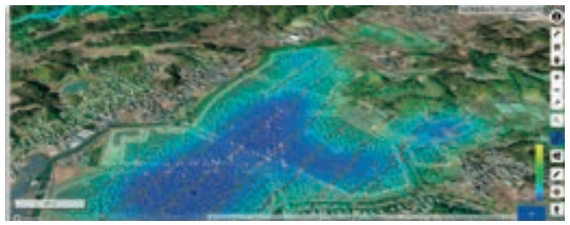



Landslide Monitoring
LIANA © Mapbox © OpenStreetMapImprove this map © Maxar © Original ALOS-2 data provided by JAXA Tellus Satellite Data Master is used.

With the increased range and accuracy of satellite image resolution and analysis capabilities, the possibilities for remote sensing are expanding. Utilizing the characteristics of satellites with their wide coverage and periodicity, we are working on the development of technologies to assess the actual damage caused by heavy rains and other disasters, and on disaster prevention and mitigation projects through infrastructure monitoring.



Urban Landfill Subsidence Analysis



Monitoring Deformations in Solar Power Project Sites

## Our Technology

### LIANA (Land-deformation and Infrastructure ANAlysis)

LIANA (Land-deformation and Infrastructure ANAlysis) is a service jointly developed by SKY Perfect JSAT, NK, and Zenrin to monitor slope and infrastructure changes. The service displays a time series of ground deformation in areas the user wishes to check, and evaluates risk based on the Ministry of Land, Infrastructure, Transport and Tourism's standards for ground extension meters and the knowledge of NK.

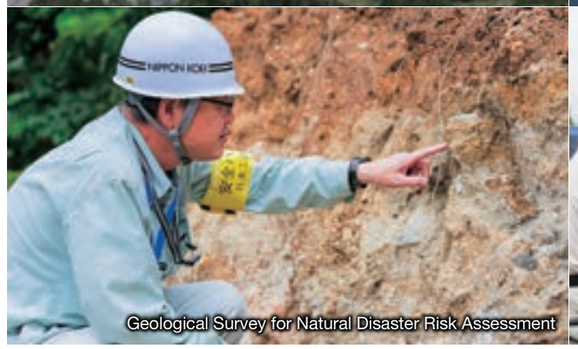
For the web system that provides the results, NK provided the know-how that is easy for users to understand visually and can be incorporated into management operations. Zenrin's detailed map data was implemented, and the web UI was developed by SKY Perfect JSAT.

By utilizing satellite images, large areas of several tens of square kilometers can be screened at once, which could not be ascertained by surveying alone, thus reducing the cost that corporations and municipalities have spent on maintenance and inspections.

# Disaster Management


Eruption of Sakurajima, Japan


Volcanic Sabo in Sakurajima, Japan


Geological Survey for Natural Disaster Risk Assessment


Field Survey Immediately After the Disaster

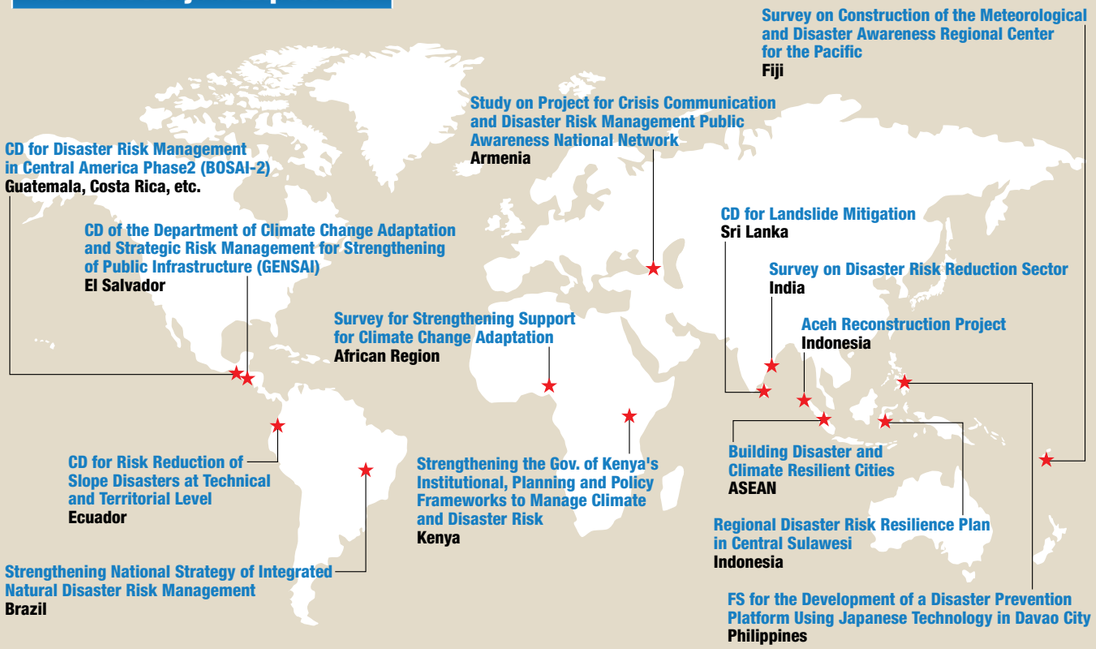
NK has developed and proven technologies that have placed us at the forefront of contributions to disaster management initiatives over the last 60 years.

We provide consulting services that cover all aspects of natural hazards and risk management, from preparedness to recovery and early warning system development, from identification and assessment of the hazards and risk to incorporation of such hazards into development, as well as from geological and geotechnical investigation and monitoring to design and construction supervision of structural measures.

## Coverage

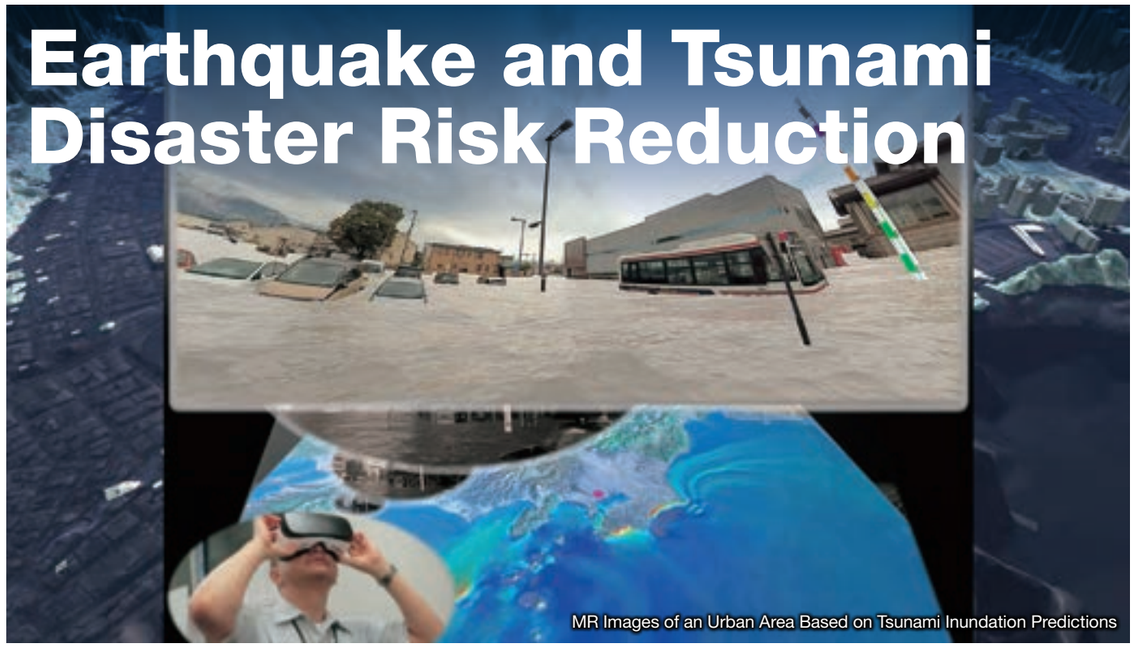
- Earthquakes
- Landslides
- Steep Slopes
- Tsunami
- Ground Subsidence
- Volcanic Eruptions
- Storms
- Heavy Rain
- Floods
- Forest Fires
- Drought
- Coastal Erosion

## Selected Project Experience

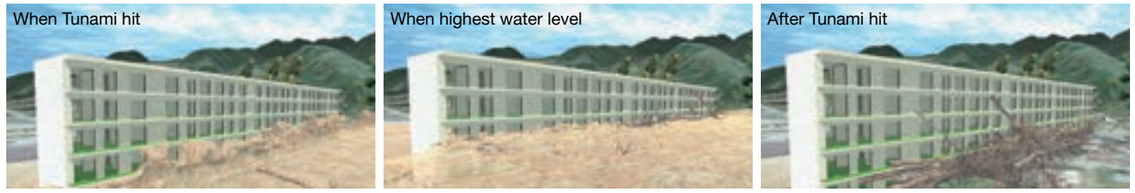





# Earthquake and Tsunami Disaster Risk Reduction


MR Images of an Urban Area Based on Tsunami Inundation Predictions

NK has provided consulting service for earthquake and tsunami disaster risk reduction before the disasters and recovery and reconstruction after the disasters. Our services include hazard and risk assesment, developing disaster risk reduction plan/recovery and reconstruction plan at municipal level for earthquake and tsunami. Hazard and risk assessment includes ground survey; active fault survey; wave and coastal survey; building seismic diagnosis; and damage estimation of residents, private & public buildings, critical infrastructures, lifelines, etc. We also extend the service to integration of disaster risk reduction and Build Back Better measures with statutory plans such as land use/spatial plans and municipal strategic plans.



VR Images of High Realistic and Presence Simulation by Tsunami, Tidal Wave, and Overflow Simulation

## Selected Project Experience

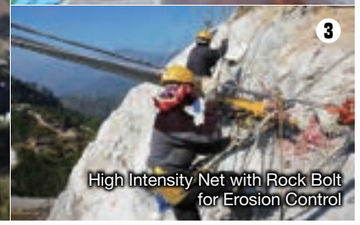
| Country | Project |
|---|---|
| **Indonesia** | Aceh Reconstruction Project |
| **Indonesia** | Project for Regional Disaster Risk Resilience Plan in Central Sulawesi |
| **Indonesia** | The Urgent Rehabilitation and Reconstruction Support Program for Aceh Province and Affected Areas in North Sumatra |
| **Nepal** | The Project for the Rehabilitation of Sindhuli Road Affected by Earthquake |
| **Türkiye** | "Project for Earthquake Risk Reduction and Prevention Planning for Bursa Metropolitan Municipality" and "Project for Capacity Building for Local Municipalities on Disaster Risk Reduction and Waste Management" |
| **Peru** | Advisory on National Standard of Seismic-resistant Structural Design for Metro and Urban Transportation Plan in Lima |
| **Armenia** | Project for Seismic Risk Assessment and Risk Management Plan |
| **Kazakhstan** | Study on Earthquake Disaster Risk Management for Almaty City |
| **Worldwide** | Data Collection Survey on Promotion of Disaster Prevention Investment for Urban Resilience Against Global Earthquake Disaster |

# Geo Hazard Management

Three Major Countermeasure against the Landslides and Slope Protection works, Shinduli Road Section II, Nepal

Crib works with Rock Bolt (L=3 m)

Anchor Works for Landslides



High Intensity Net with Rock Bolt for Erosion Control

We are working on both hardware and software measures to reduce the damage caused by disasters in various countries, including the development of disaster prevention infrastructure (landslide countermeasures, collapse countermeasures, erosion prevention facilities such as erosion control dams), landslide surveys and analysis, risk assessment and hazard map creation, early warning system development, strengthening of evacuation systems, and land use regulations.

## Selected Project Experience

| Country | Project |
|---|---|
| **Vietnam** | Strengthening the Capacity to Cope with and Minimize Damages Caused by Flash Floods and Landslides for the Northern Mountainous |
| **Nepal** | The Project for Countermeasures for the Landslides on Sindhuli Road (Section II) |
| **Sri Lanka** | Pilot Project for Countermeasures against the Landslides and Falling Rocks |
| **Ecuador** | Project on Capacity Building for Risk Reduction of Slope Disasters at Technical and Territorial Level |
| **El Salvador** | Development of Artificial Intelligence Algorithm to Identify Areas Susceptible to Landslides, Areas of Flow Deposits and Soils |
| **Honduras** | Preparatory Survey for the Landslide Prevention Plan for the Honduras National Highway - Route 6 |
| **Armenia** | Pilot Project for Countermeasures against the Landslides with Horizontal Drainage Works |

## Our Technology

### Realization of Advanced and Efficient Design of Landslide and Slope Protection Works

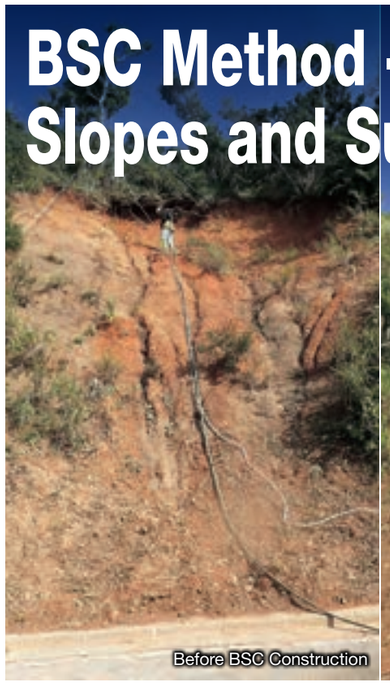
NK has been developing an automated design system for landslide and slope countermeasures.

The processing of the program is as follows: Step 1 is reading information from the design drawings and running the program to create a parametric model. Step 2 is programming the design conditions and design concepts.
Step 3 is calculating the approximate construction cost.

Until now, the time required for these tasks is more than an hour. However, with an automated design system, even non-technical operators can complete the same work in about 15 minutes. In addition to the drastic reduction in mistakes, we have achieved significant reductions in time and costs. Since it can be used not only for design but also for verification, it can be used as standard software in BIM/ CIM work for slope disaster prevention.



# BSC Method - A Natural Way to Protect Slopes and Support Vegetation Growth


Before BSC Construction


BSC Spraying


Nine Months After BSC Spraying

The Biological Soil Crust (BSC) Method is an eco-friendly solution developed by NK in Japan to prevent slope erosion and help vegetation naturally intrude and grow on soil surfaces. This method is safe for use even in environmentally-restricted areas and protected areas making it a sustainable choice for slope management and ecological restoration. We provide consultancy services to project owners who require the BSC Method.

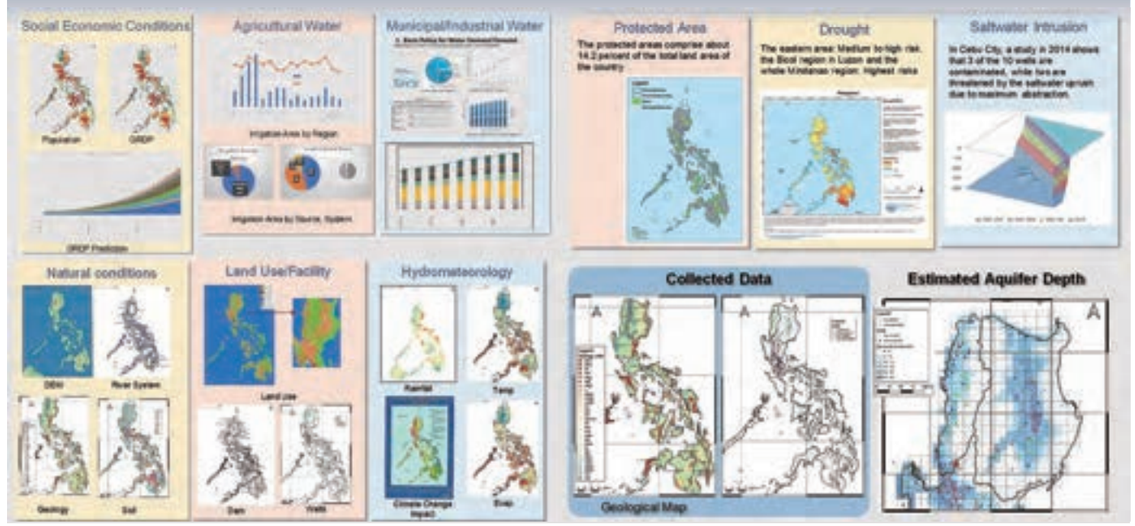
This method uses natural phenomenon to create thin and protective layers on the soil surface through the activity of filamentous bacterium, soil algae, lichens, and mosses. This natural crust holds the soil particles together on the slope surface, especially in areas where water tends to flow. The algae used in the BSC Method reduces the erosion and creates a better environment for vegetation growth. BSC Method has special features as follows:

- **Environmentally safe**: using algae found workdwide and propagating by clone, thus no risk to local ecosystems.
- **Economically efficient**: lower cost compared with ordinal natural vegetation intrusion acceleration methods, e.g., vegetation mats/ sheets without seeds, including the maintenance cost.
- **Easier implementation**: no additional works, such as slope leveling works, earth removal works/ earth disposal works, and no maintenance after implementation.
- **Ideal for remote/mountainous areas**: can be conducted by using drones or helicopters.

## Selected Demonstration Project Experience

| Country | Project |
|---|---|
| **Malaysia** | SDGs Business Model Formulation Survey with the Private Sector for Turbid Water Control Using BSC Method with Waterworks Sector |
| **Malaysia** | Demonstration of Road-side Slope Restoration using Environmentally Friendly Soil Algae |
| **Malaysia** | Demonstration of Road-side Slope and Mountainous Slope Failure Restoration using Environmentally Friendly Soil Algae |
| **Nepal** | Collaboration Program with the Private Sector for Disseminating Japanese Technology for Environment-Friendly Slope Restoration with Soil Algae |
| **Mongolia** | The Global South Future-Oriented Co-Creation Project for Demonstration of Grassland Restoration using Environmentally Friendly Soil Algae |

# Water Resources Management and Development




Comprehensive Facters or Water Resources Management

We formulate master plans and implementation programs for water resources development and management, and plan, design, and supervise the construction of dams, water supply systems, irrigation, and other facilities necessary to protect lives and property from flood damage.
In recent years, we have also focused on providing advanced technologies for climate change-related studies and effective utilization of river facilities, including their operational aspects.


Climate Change Impact, Indonesia


Dam Upgrading Projects, Philippines


Water Resource Advisor, Kenya

## Our Technology

### Water Resources Management for Advanced Technologies

In recent years, we have focused on providing advanced technologies for 1) climate change countermeasures, 2) dam upgrading projects, and 3) integrated water resources management.

We have incorporated advanced climate change impact assessment technology into water resource planning to promote mitigation and adaptation measures.

We are also addressing challenges such as aging and sedimentation in existing water infrastructure facilities through the use of BIM/CIM and advanced construction technology.

Additionally, we are implementing studies and projects for remote, wide-area integrated water resources management, and river basin flood management using remote sensing data and ICT technology.


Countermeasures for Sedimentation in Wonogiri Multi-purpose Dam, Indonesia



# Water Resource Management

Our expertise in the water resources sector ranges from water policies, legislation and institutional reforms to design and implementation of water resources facilities such as dams, barrages, and sluice gates.


Mwache Multi-purpose Dam, Kenya


Sutami Dam Upgrading in Brantas River Basin, Indonesia


Integrated Water Resources Management, Philippines

# Flood Management

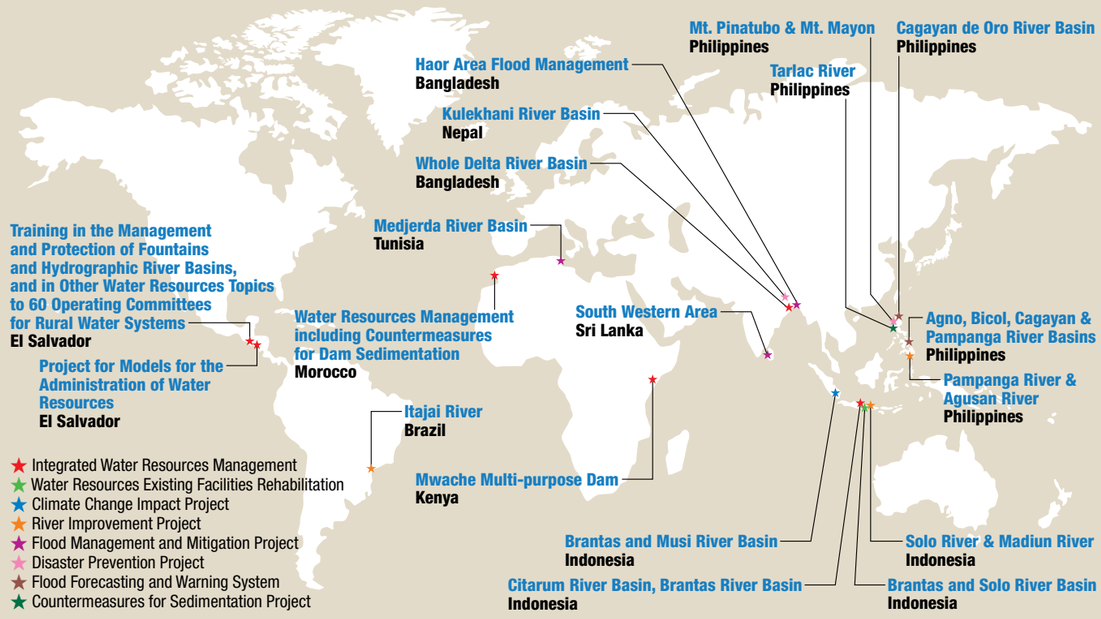
NK is highly experienced and possesses specialized expertise in the field of flood damage mitigation. We have solved a diverse array of flood damage problems through both structural and nonstructural measures.


River Training Works at Mancatian Bridge in Pasig-Potrero River, Philippines


Haol Flood Management and Livelihood Improvement Project, Bangladesh


Flood Forecasting System in Cagayan de Oro River, Philippines

## Selected Project Experience



# Water Supply

NK has carried out planning, design, and construction supervision of the entire water supply system. We also provide consulting services such as institutional development, non-revenue water reduction, PPP formulation, and utility management support.

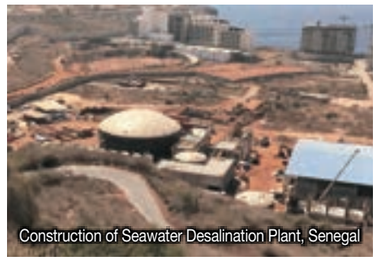

CHAVIMOCHIC Water Treatment Plant, Peru


Modernization and Replacement of Water and Sewer Networks in Centro Parrilla, Colombia


Image of Rural Water Supply Facilities

# Desalination for Water Supply

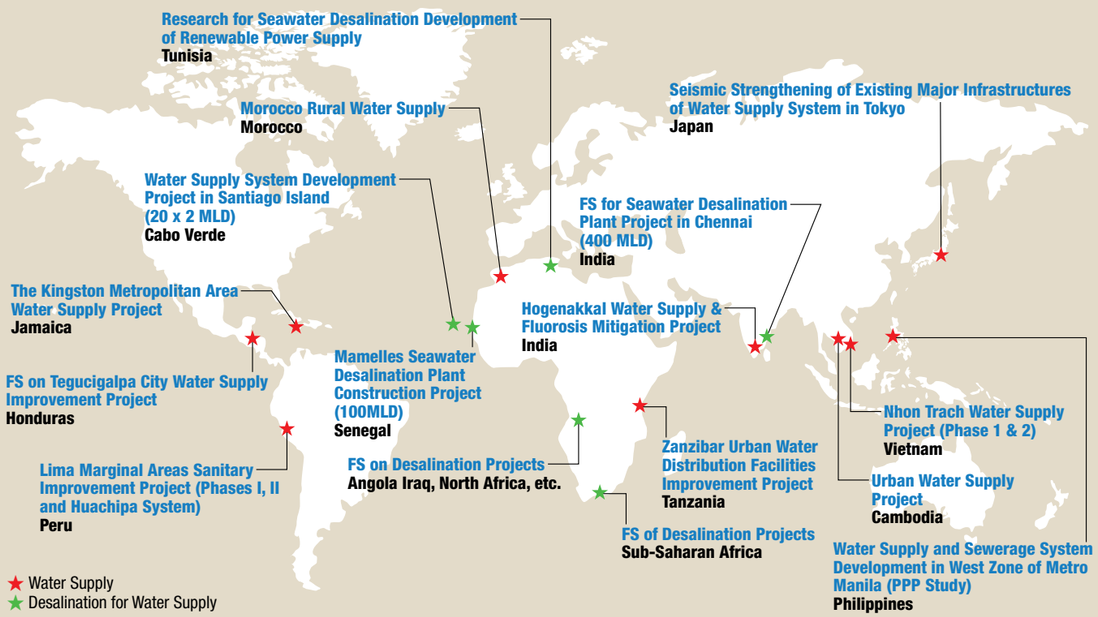
NK has provided planning, design, construction supervision, and advisory services on operation and maintenance for desalination plant projects with the capacities ranging from 40 to 400 MLD. The facilities include intake, pre-treatment units (such as membrane and sand filters), high pressure pumps, and reverse osmosis (RO) filters.


Construction of Seawater Desalination Plant, Senegal


Towing of Submarine Pipelines, Senegal


Filtration Equipment for Pretreatment, Senegal

## Selected Project Experience






# Sewerage

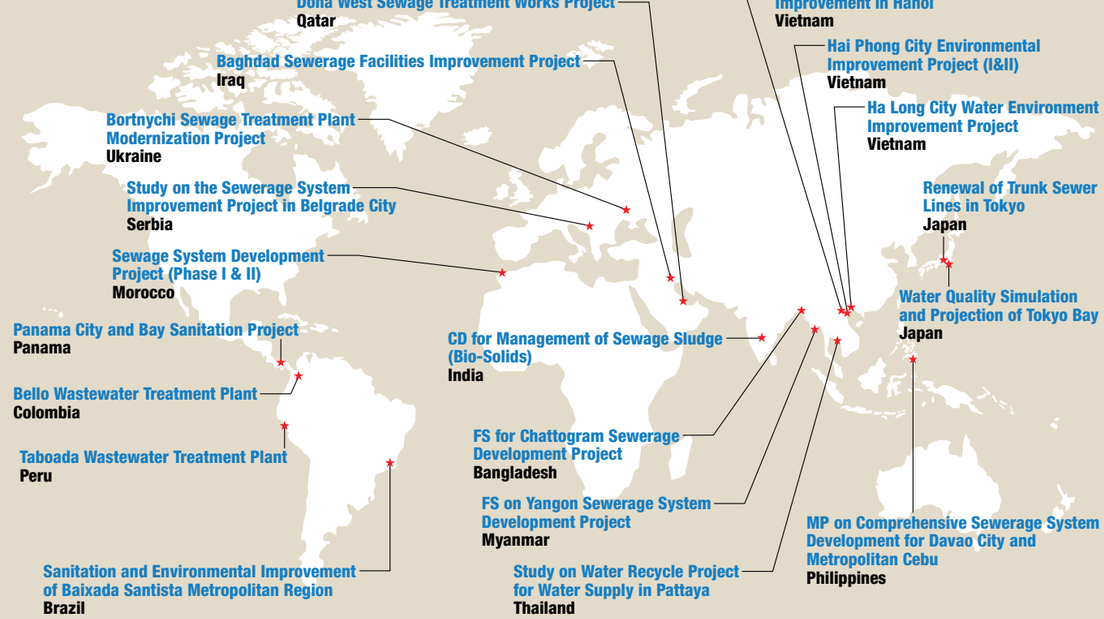

Bello Wastewater Treatment Plant Construction Project, Colombia

Our services include water quality simulation of public water bodies, diagnosis and reinforcement design of existing sewer lines, asset information management, sewerage tariff structural studies, advisory services for efficient facility operations, and the formulation of PPP projects. We also offer consulting services covering financial, environmental, social, and institutional aspects related to project implementation and O&M.


Doha West Sewage Treatment Construction Project, Qatar


Bortnychi Wastewater Treatment Plant Modernization Project, Ukraine

## Selected Project Experience



# Urban Drainage


Metropolitan Area Outer Underground Discharge Channel, Japan

NK is well-known in planning, design, and construction supervision of large-scale urban drainage systems including drainage channels, culverts, storage facilities, control gates, and pumping stations in more than 15 countries.

## Services

- Rainfall and runoff analysis
- Drainage network modeling
- Flood simulation
- Planning for drainage system and design of drainage facilties
- Advisory service for efficient facility operations
- Environmental, social, and institutional issues related to project implementation and O&M

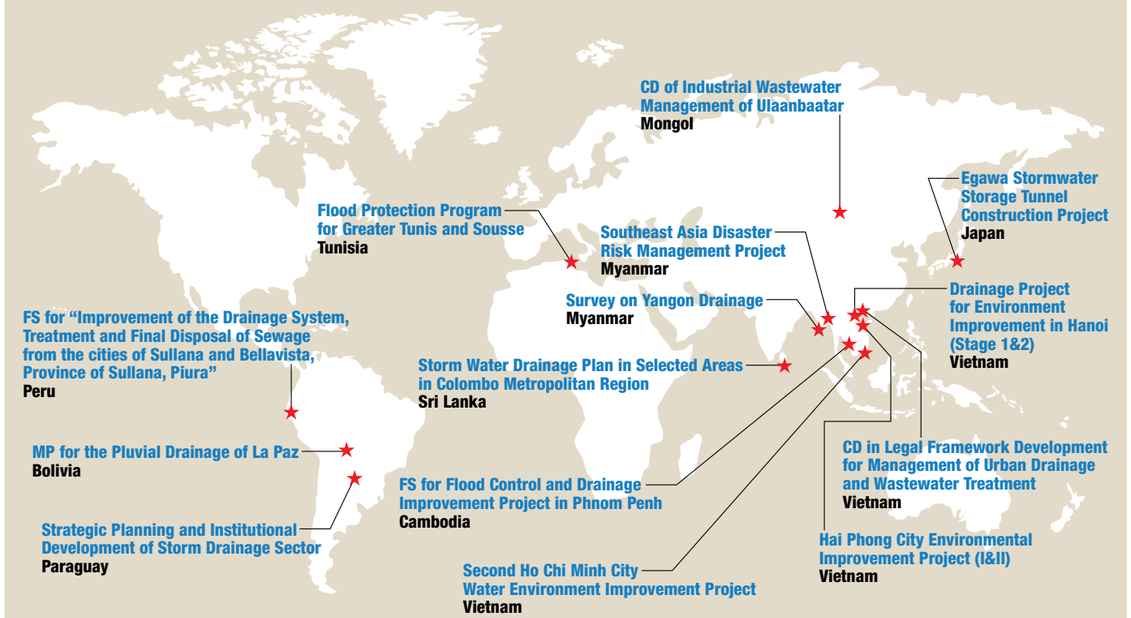
## Expertise

We have extensive expertise in large-scale deep underground structures such as:

- Shield tunnels
- Underground rivers
- Underground stormwater reservoirs (as big as 8.5 m diameter, 45 m depth, and 1500 m length)
- Large-scale drainage pumping station (90 $m^3/s$)

We possess vast knowledge in hydrology, hydraulics, structural design including climate change, anti-earthquake design, and project management.

## Selected Project Experience






# Environmental and Social Management

We have been providing comprehensive support for studies and planning, policy and institutional development, facility design, project implementation support, and human resource development and capacity building in areas such as air and water quality management, urban environmental improvement, river and marine ecosystem, and holistic environmental governance.

In recent years, we have been actively addressing global and transboundary environmental issues such as PM2.5 pollution, marine plastic waste, and water resource management in international river basins, in collaboration with both central and local government agencies. We have also contributed to the development of strategies and guidelines that promote balanced economic growth and environmental protection. These initiatives include promotion of green growth at the provincial level, the development of guidelines for transformation to eco-industrial parks, and strategic policy proposals to reduce air pollution and greenhouse gas emissions with careful consideration of economic viability, institutional frameworks, and technical feasibility.

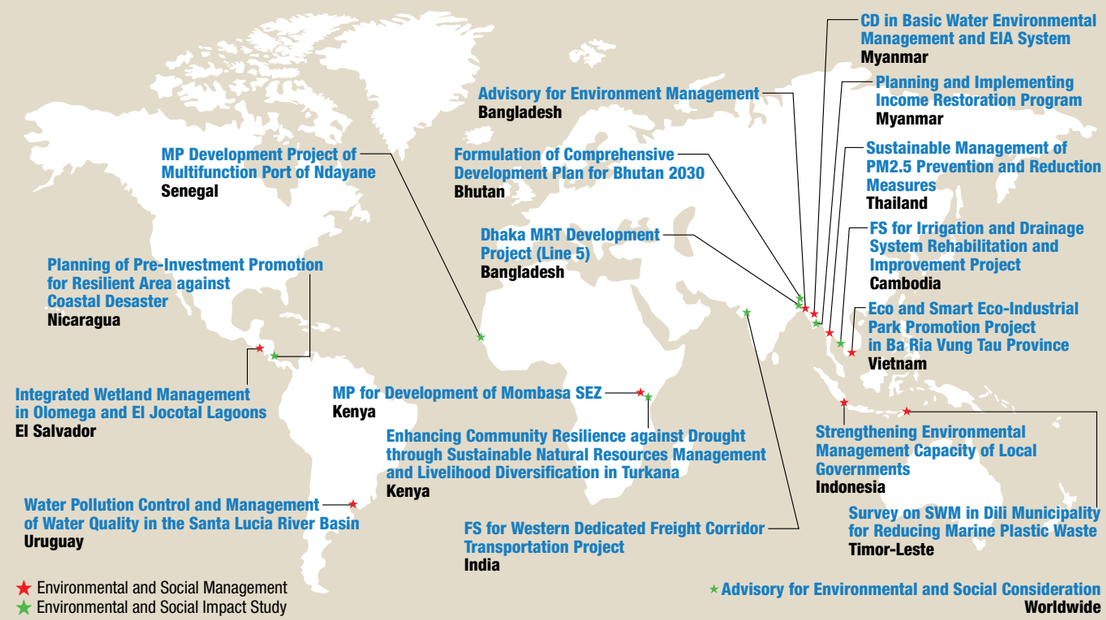
# Environmental and Social Impact Study


Resettlement Seminar, Myanmar

We have carried out a comprehensive environmental and social impact studies throughout all phases of infrastructure development, aimed at identifying, avoiding, and minimizing potential negative impacts, in accordance with internationally recognized standards and safeguard policies.

We ensure the efficient implementation of infrastructure projects and the acquisition of their environmental clearance all over the world based on our long-term experience in environmental, social, safety, and health impact studies.

## Selected Project Experience



# Climate Change Consulting


Wind Power Generation, Jamaica


Survey of Methane Gas Leakage, Bangladesh

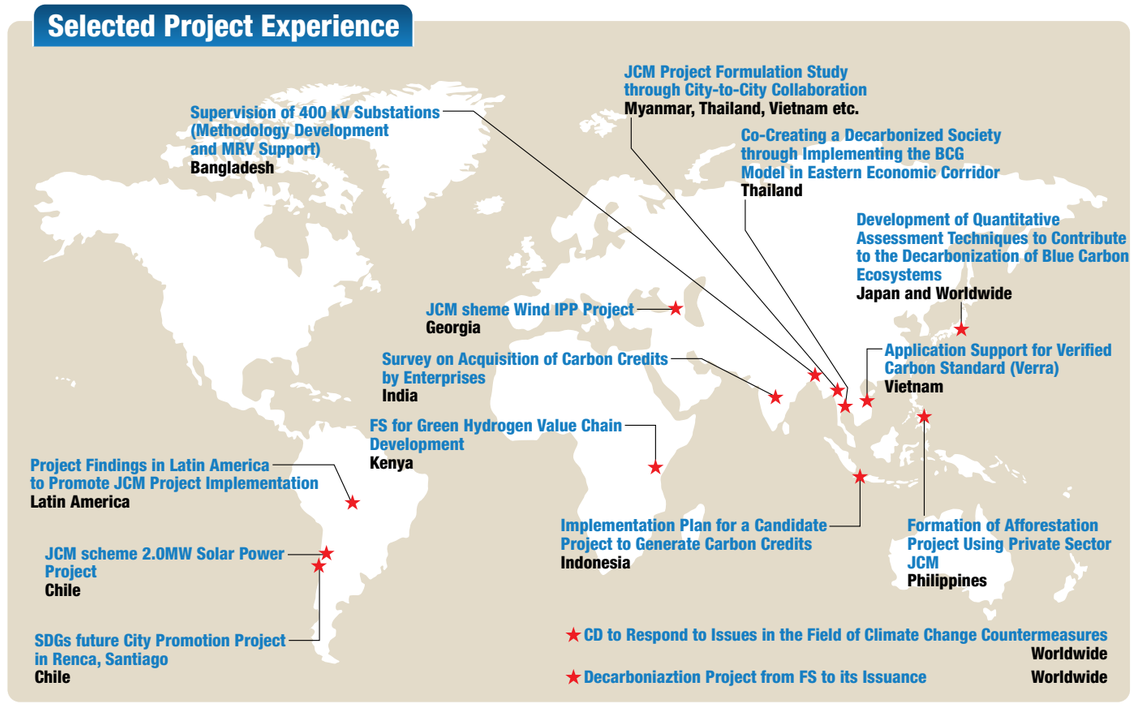
Image of Climate Change Measures

NK is one of the few one-stop consulting service providers in the field of climate change, mainly related to decarbonization. We provide various consulting services to businesses operating in voluntary credit and bilateral credit schemes (e.g., Joint Crediting Mechanism “JCM”), regardless of country or technology sector.

## Services

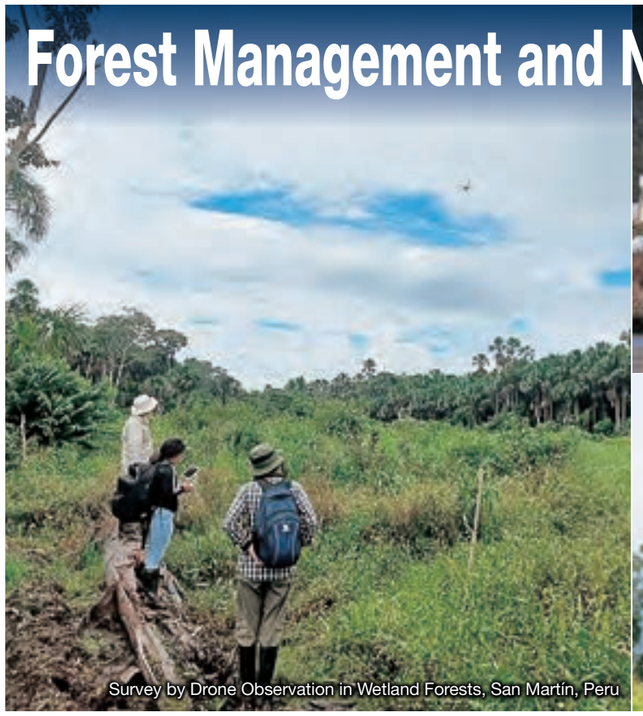
- Tailor-made proposals in line with the carbon neutrality goals of private companies, utilizing our overseas network.
- Carbon credit feasibility studies in Japan and overseas, support for various credit applications.
- Joint participation in decarbonization-related ministry projects to formulate decarbonization projects.
- In-house R&D and carbon credit structuring consulting services for future trading in the carbon credit market such as biochar  and blue carbon.
- MRV (monitoring, reporting and verification) operations and credit issuance support.
- JCM Project Formation Support for cooperation between Japanese and overseas local governments.

## Selected Project Experience






# Forest Management and Nature Conservation

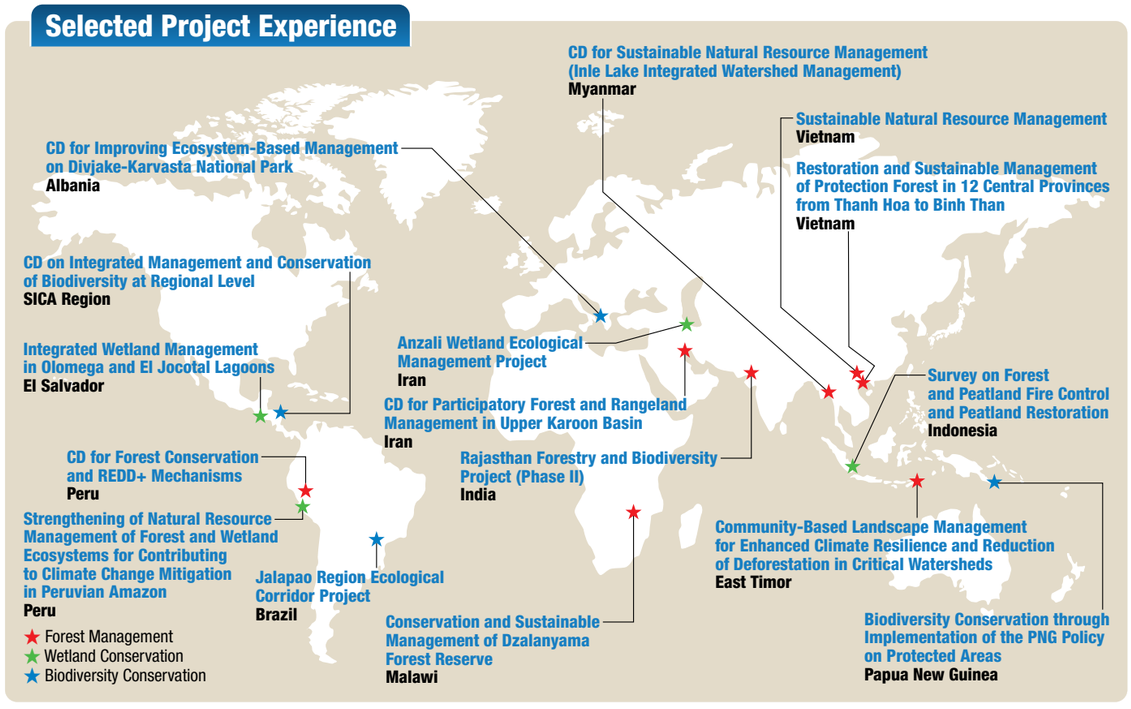

Survey by Drone Observation in Wetland Forests, San Martín, Peru


Monitoring of Nesting Sites of Dalmatian Pelican, Albania

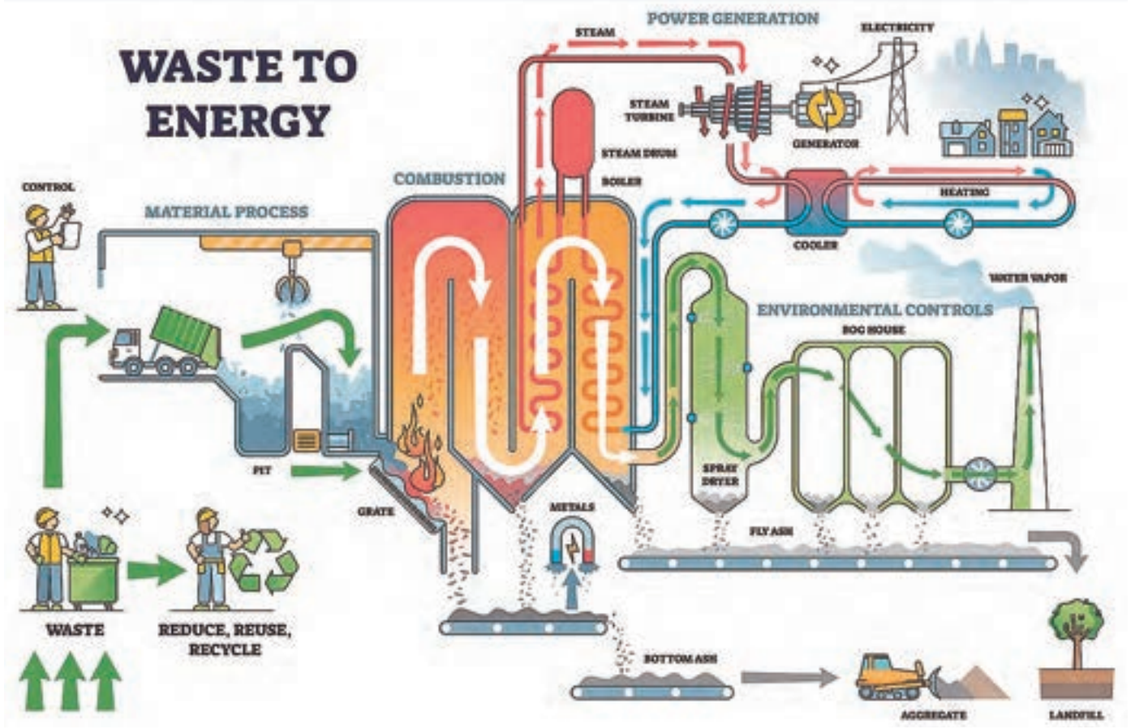

Monitoring of Illegal Logging in Tropical Rainforests, Peru

We provide services for research, planning, project implementation support, and human resource development mainly in developing countries to conserve and restore forests, conserve and improve protected areas, ecosystems and biodiversity, improve and enhance ecosystem services to strengthen the resilience of local communities against climate change and natural hazard, and reduce GHG emissions by reducing deforestation and forest degradation and conserving wetlands including coastal areas. We also support private companies to formulate carbon credit projects in the forestry sector.

## Selected Project Experience



# Solid Waste Management




Example: Process Flow for Waste-to-Energy (WtE) Facilities

NK provides comprehensive technical support to central and local governments in developing countries to strengthen underdeveloped waste management systems. Our services cover the formulation of master plans; improvement of waste collection and final disposal; procurement of equipment; and the design of facilities such as landfills, waste-to-energy plants, recycling facilities, resource recovery and transportation systems, as well as sanitary landfills. We also address marine debris countermeasures and disaster waste management. Through these services, NK is committed to advancing a circular economy by promoting the sustainable and efficient use of resources currently regarded as solid waste.

## Our Project

### Advancing AI for Rapid and Safe Asbestos Detection

Ensuring safety—especially from asbestos exposure—is critical in disaster waste management. Drawing on experience in Japan, Turkey, and Ukraine, we are developing an AI-powered application that utilizes advanced object detection technology to enable fast and reliable asbestos identification.

This software is being developed in collaboration with a leading expert in simplified asbestos analysis. Our team is training and refining the AI-based identification model and conducting field verification at actual demolition sites using the developed software.

By integrating the strengths of our AI-specialized R&D unit and our experienced waste management team, this fusion of scientific expertise, field knowledge, and technical innovation, is driving the development of a globally scalable solution—aimed at domestic deployment next year and international expansion in the near future.


AI-based identification of asbestos fibers using advanced image analysis technology.
Example of automated detection of chrysotile (white asbestos).



# Promotion of Circular Economy and 3R

Utilizing the knowledge and technologies developed in Japan for a sound material cycle society, NK has contributed to the improvement of waste management as well as establishment of a circular economy, which is a global challenge.


Actually Installed Separate Garbage Cans, Maputo, Mozambique

Environmental Painting Diary Activity by Children, Mozambique

Waste Pickup Activity at an Elementary School, Mozambique

# Disaster Waste Management

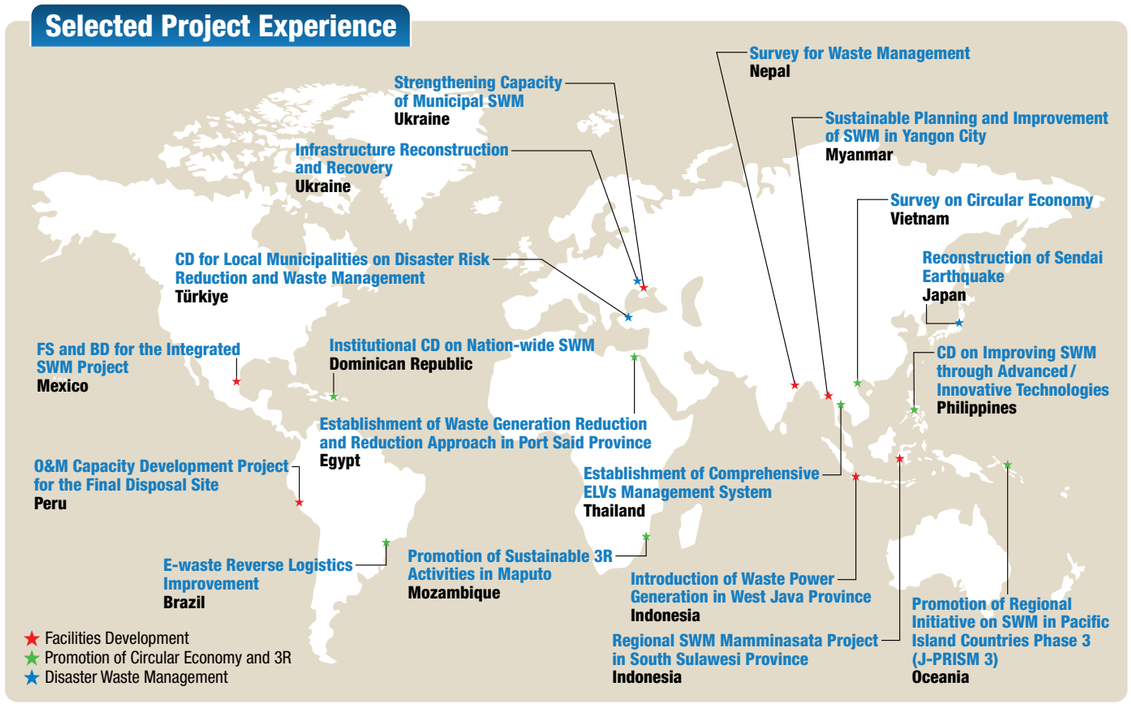
We have experienced the generation of tremendous amounts of waste due to unexpected results caused by climate change and crustal movements etc. NK possesses expertise in planning for emergencies, based on Japan's experience as a disaster-prone country, as well as in strategies for handling debris that have already been generated.

Debris Crushing, Ukraine

Temporary Storage Site in Kahramanmaraş Metropolitan Municipality, Türkiye

Seminar on Dissemination of the National Disaster Waste Management Guidelines, Türkiye

## Selected Project Experience



# Agriculture and Rural Development

we offer technical services in irrigation, drainage, and rural infrastructure development; formulation and dissemination of appropriate agricultural techniques, improvement of agricultural value chains from production to logistics, climate change mitigation and adaptation measures, and overall rural development.


Himachal Pradesh Crop Diversification Promotion Project, India


Project on Improvement of Rice Productivity for Irrigation Schemes of the Valley, Senegal


Advanced Flower Cultivation Technology, Vietnam

# Rural Infrastructure

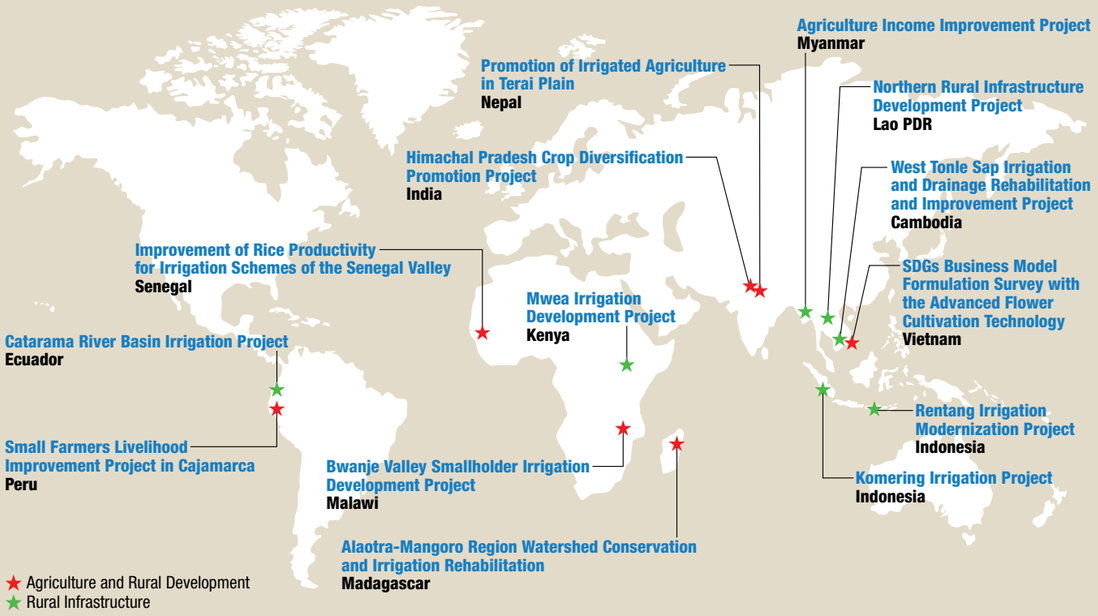
We work across various infrastructure types, including dams, headworks, groundwater wells, canals and related irrigation facilities, farm roads, and post-harvest facilities. We support the establishment and strengthening of water user associations.


Komering Irrigation Project, Indonesia


Mwea Irrigation Development Project, Kenya


Northern Rural Infrastructure Development Project, Lao PDR

## Selected Project Experience






# Agriculture Support and Training Services

Our advanced technical services aim to enhance agricultural productivity and rural livelihoods through improved post-harvest processing and agricultural value chains, strengthened farmer organizations, integrated safeguard considerations, nutrition promotion, facilitation of rural finance, and support for private agribusiness.


Project for Improving the Reliability of Safe Crop Production in the Northern Region, Vietnam


Promotion of Horticultural Cultivation through Drip Irrigation in Jharkhand State, India


Project for Improving Agricultural Extension for Market-Oriented Agriculture, Palestine

# Climate Change Mitigation and Adaptation

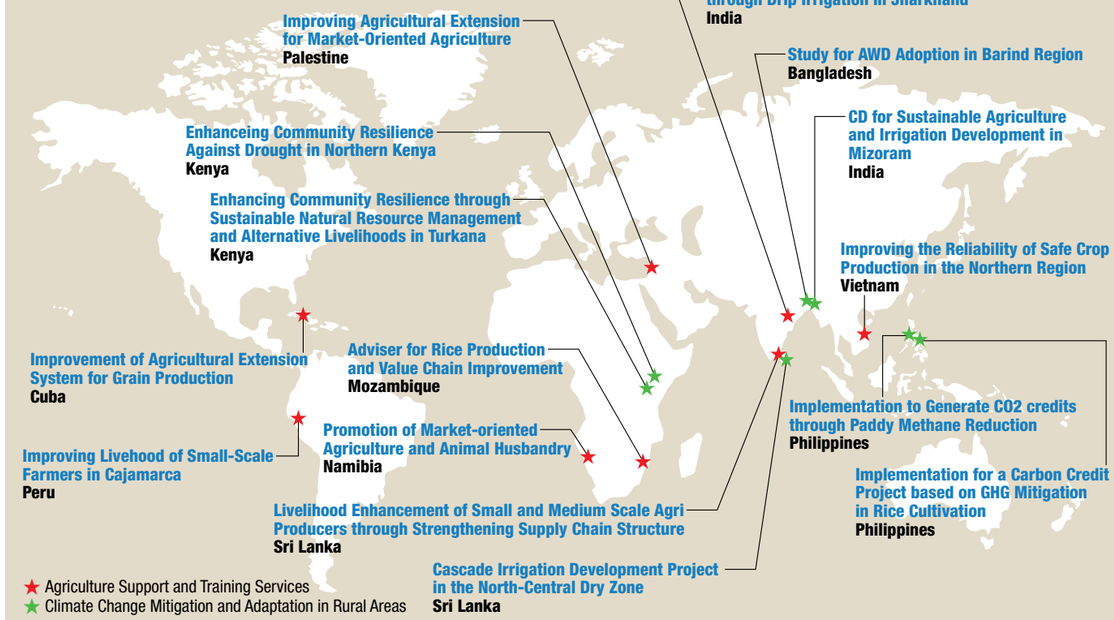
We provide technical services in climate change mitigation and adaptation aimed at strengthening resilience, particularly against declining agricultural yields and quality, widespread field flooding and soil erosion, and damage to rural infrastructure and living environments.


Sustainable Natural Resources Management and Livelihood Diversification, Kenya


Cascade Irrigation Development Project in the North-Central Dry Zone, Sri Lanka


Water Level Monitoring of Alternate Wetting and Drying (AWD), Philippines

## Selected Project Experience



# Sustainability Consulting Services

NK Sustainability Design Team offers a wide range of consulting services to support and accelerate sustainability performance, such as human rights and environmental due diligence (DD), responsible procurement and supply chain management, and nature-based carbon credit solutions with biochar. NK also assists in developing and promoting nature-positive initiatives.


Human Rights and Environmental DD, Columbia


Biodiversity Risk Survey in TNFD, India

We offer self-assessment tools for both municipalities and private companies. TSUMUGI@™ enables local governments to visualize their SDGs progress, while KIBOH2030 helps companies strengthen sustainability management and improve supplier performance.


SDGs Progress Monitoring Tool

## Selected Project Experience

| Country | Project |
|---|---|
| **Myanmar** | Human Rights and Environment Due Diligence |
| **Myanmar** | Impact Assessment Services for Environmental, Social, and Human Rights (Phase1, 2) |
| **Indonesia, Vietnam, Thailand, Brazil** | "Survey on GHG Reduction Technologies Related to Biochar and Agricultural Land" in 'International Standardization of GHG Reduction and Absorption Technologies in the Agricultural Sector' |
| **Worldwide** | Consulting Services for Advancing Sustainability Management |
| **Worldwide** | Support Services for TNFD Endorsement and Disclosure Implementation |
| **Worldwide** | Capacity Development Support for Climate Change Responses and Biodiversity Mainstreaming |
| **Worldwide** | Support for Capacity Development Project in Promoting Mobilization of Climate Funds |
| **Japan** | Support for Promoting SDGs Initiatives in Local Governments |

## Our Project

### Consulting Services for Carbon Credit Generation through Biochar Utilization

NK provides specialized consulting services to support carbon credit acquisition through the effective utilization of biochar.

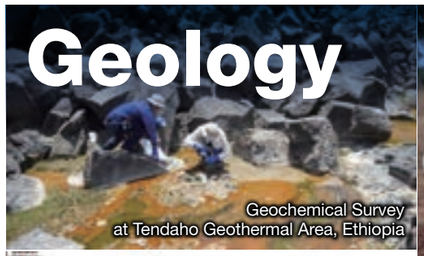
This approach reduces greenhouse gas (GHG) emissions by carbonizing organic waste—such as sewage sludge, known for its high environmental impact—as well as underutilized agricultural and livestock residues.

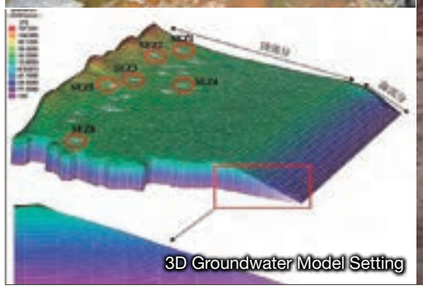
The resulting carbonized material, known as biochar, can be repurposed as fertilizer, an energy source, or a construction material, contributing to solutions for a wide range of social and environmental challenges.

Note: Biochar is a soil amendment that enables long-term carbon sequestration while also enhancing soil permeability.



# Geology


Geochemical Survey at Tendaho Geothermal Area, Ethiopia


3D Groundwater Model Setting


Inspection of Hand Pump Wells after Completion, Kenya

Geo-technologies for soil and foundation engineering and earthquake disaster risk prevention are indispensable technologies for infrastructure development projects, and play a role as elemental technologies that support all the projects. Environmental geology is necessary to be conducted after the infrastructure development projects are planned. Furthermore, we conduct renewable energy development projects, such as survey for ground source heat pump and geothermal energy development.

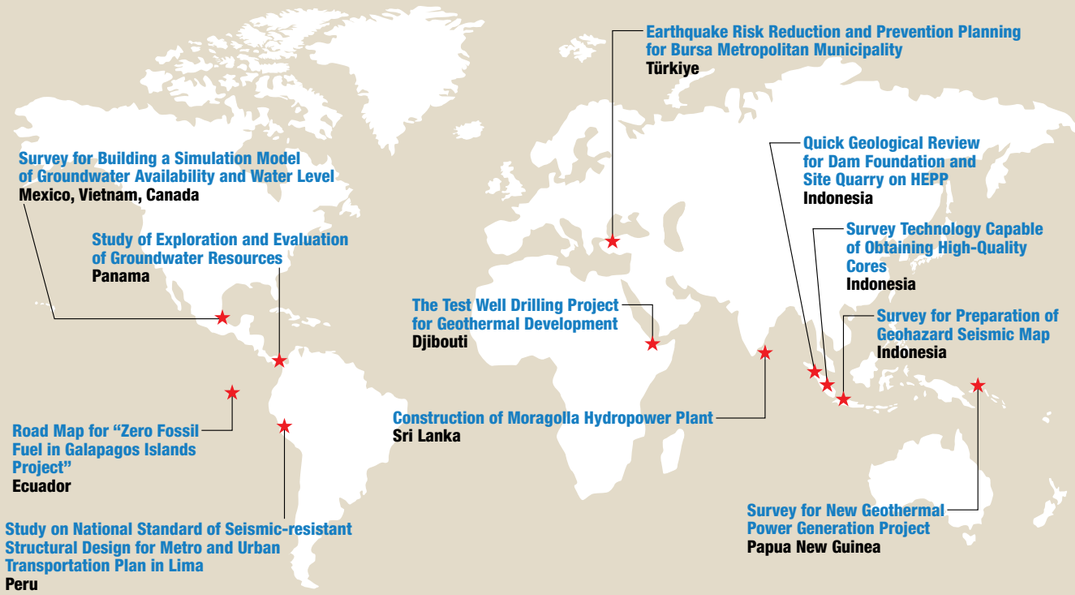
## Sector

- Airports
- Ports
- Soft ground
- Fill dams
- Foundation works
- River structures and levees
- Water supply and sewerage facilities
- Other civil engineering facilities

## Our Specialization

- Environmental impacts and contaminations
- Impact assessment
- Mitigation measures
- Groundwater development
- Groundwater resources evaluation
- Groundwater modeling and simulation

## Selected Project Experience



# Realization of a Prosperous Society

Exhibition booth at the TICAD7 "Japan-Africa Business Forum and EXPO" Japan Fair (Edu-port Japan)


Interviews and Guidance at the Implementation Status of Pilot Activities for Nurses and Nutritionists, Fiji


Suturing Practice at Training on Emergency Obstetric Care in a Health Project, Tajikistan

NK's subsidiary, Koei Research & Consulting Inc. (KRC), provides socio-economic consultancy for countries to enhance their growth and development in five areas outlined below.

### Economic Development

- Promotion of Economic Sector Development
- Accelerating
- Infrastructure Finance

### Education & Human Resource Development

- Quality and equality improvement in education at all levels

### Social Development & Peacebuilding

- Driving social equity through rural empowerment and governance
- Comprehensive approach for peace consolidation

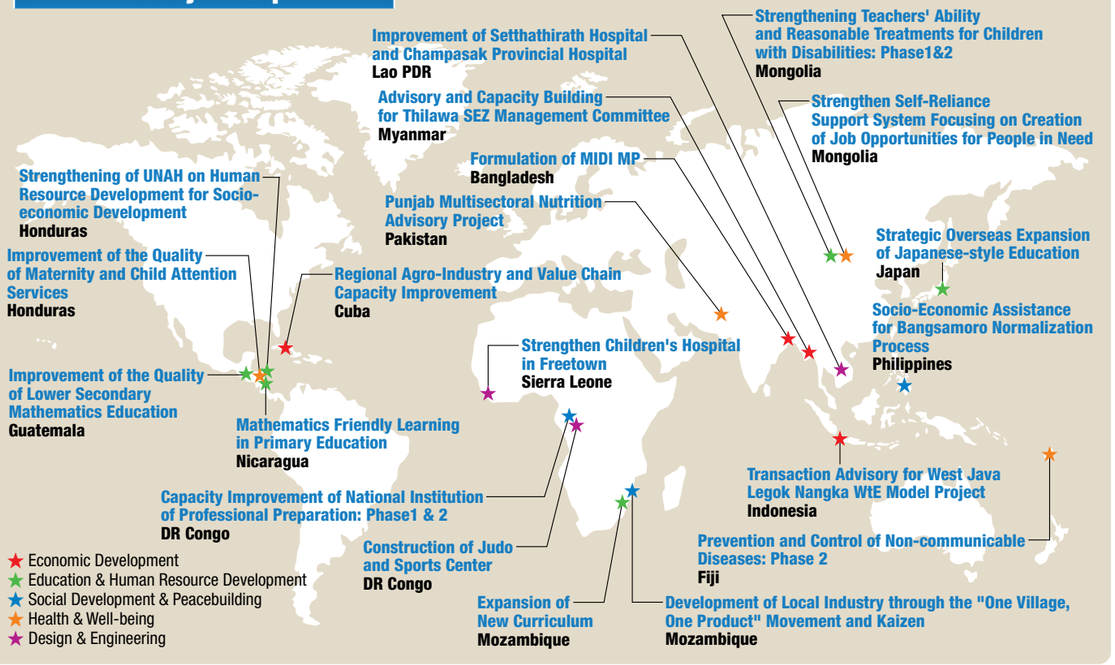
### Health & Well-being

- Enhancing well-being through health and social protection support

### Design & Engineering

- Support the development of facilities and equipment that meet local needs

## Selected Project Experience






# Nippon Koei Research & Development Center

**NK has its own Research & Development (R&D) state-of-the-art facility delivering high quality engineering solutions and appropriate countermeasures for the specific site conditions of our Clients by researching and developing new technology.**

Our R&D Center, located on a 67,600 sq. meter site in Tsukuba Science City, integrates all NK engineering research activities into one multi-disciplinary unit. Center specialists directly participate in projects, working closely with the Client's personnel at local laboratories and in the field for the development of most appropriate solutions and for the transfer of technology to the Client personnel. The objective of the center is to continually pursue new engineering solutions making the good better, the fast faster, and the cost lower.


Nippon Koei's R&D Center located in Tsukuba Science City

## Services

| | |
|---|---|
| **Development of Safe and Secure Infrastructure** | We research and develop technologies to reduce disaster risks through various physical numerical simulation technologies, monitoring technologies, hydraulic and geotechnical experimental technologies. |
| **Global Environmental Preservation** | We are developing user-friendly indicators for decision-making and water resources risk management amidst climate change uncertainty. Also, employing eDNA analysis and cutting-edge environmental monitoring technologies. |
| **Development of Smart Cities** | We aim to improve urban efficiency and residents' QoL through the development of DX strategies, IoT technologies, and 5G communication networks, leveraging smart sensors, and real-time data analysis. |
| **Utilization of Advanced Core Technologies** | We are researching applications for the latest technology trends such as AI, XR, BIM/CIM, and sensing technologies. By conducting our original and high-level research, we aim to develop revolutionary solutions. |

## Our Technology

### Responding to Climate Change

Effective decision-making under uncertainty is crucial for future designs and investments and must be robust, involving the consideration of all possible scenarios when proposing solutions. We are developing user-friendly indicators for decision-making and water resource risk management under climate change uncertainty. In parallel, we are building on in-house developed models to facilitate water cycle analyses at both global and local scales.

ID&E
A member of Tokio Marine Group

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