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HANMAC Engineering & Consultants

 **HANMAC** Engineering & Consultants

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“Pioneer Challenge, Complete Satisfaction”



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Introduction

Hanmac Engineering and Consultants was established in 1996 as a 44-person firm providing roadway design and planning services, merged Daehan Construction Engineering was established 1990, and has since grown into a full-service, multidiscipline consulting firm with more than 290 professionals in Seoul, Korea. Hanmac combines a strong technical base with a diversified staff of professionals. This combination provides a wide range of engineering and planning services for a variety of industries. Hanmac is one of the fast growing civil engineering firm in Korea that we are continuously developing business models and diversifying our expertise in Civil Engineering and Information Technology.

Business Area

Hanmac serves a variety of public and private entities in Korea, which allows our clients to take advantage of the company's expertise in planning, engineering design and program management. Hanmac applies this expertise to a variety of project types, including transportation, bridge design, environmental engineering, water resources, urban planning, tunnel, and construction supervisions.

Additionally, Hanmac expands its service area to Information Technology in wired or wireless telecommunication network using VoIP technology, VoIP devices and intelligent Parking Management System from LPR(License Plate Reader) based on Automated Image Recognition technology.



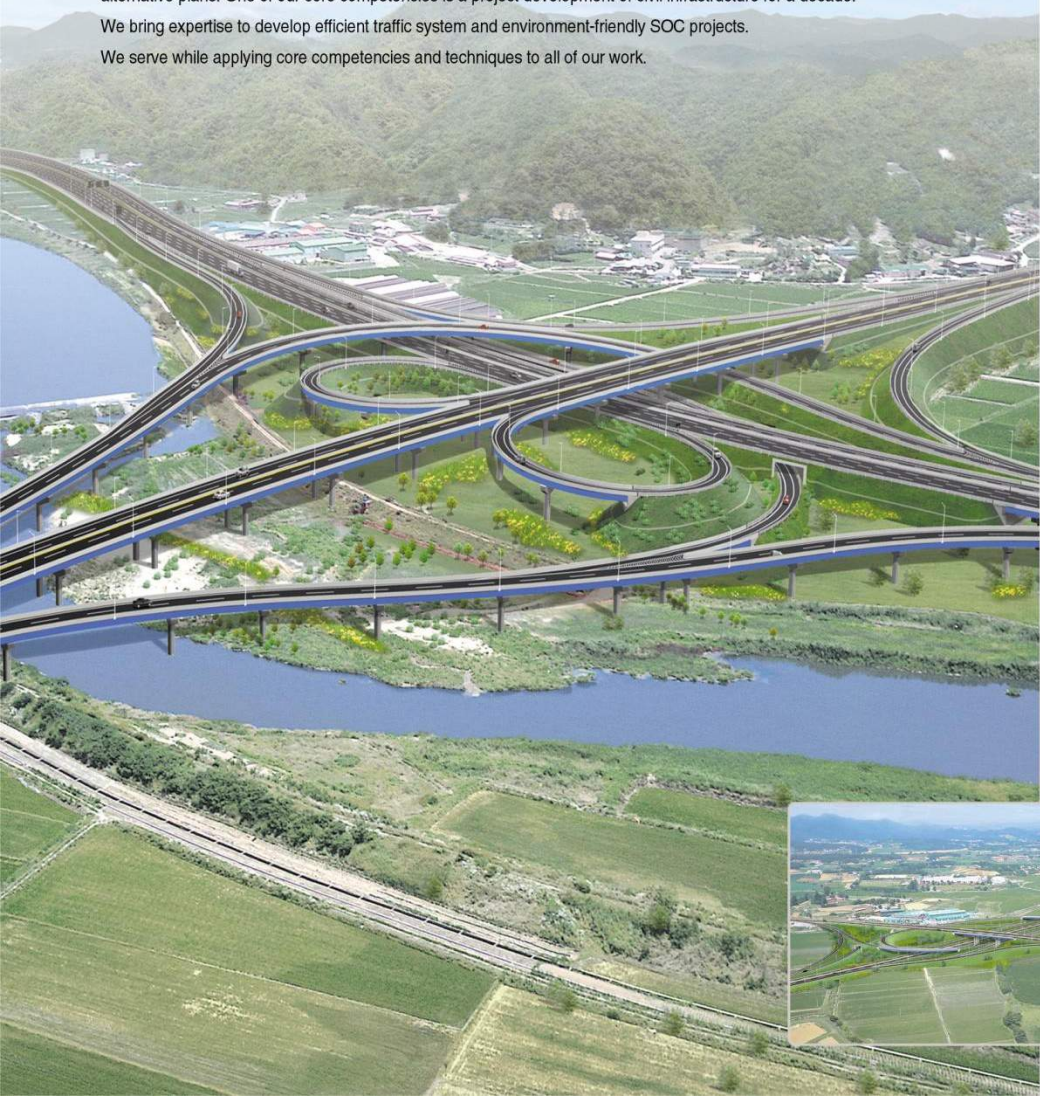
Road Design

We are providing road designs and consulting services to our valuable customers with satisfaction.

We are also participating in a wide variety of project areas such as Expressways, National Highways, SOC, Turnkeys and alternative plans. One of our core competencies is a project development of civil infrastructure for a decade.

We bring expertise to develop efficient traffic system and environment-friendly SOC projects.

We serve while applying core competencies and techniques to all of our work.



Projects

Expressways

- Detailed design of Seoul-Pusan Expressway (Eonyang-Busan)
- Detailed design for widening the 88 Olympic Expressway project(section 1,3)
- Seoul outer circulation Expressway

National highways

Detailed design of

- Seongnam-Janghwon
- Imsil Chongwoong, Sungsu bypass
- Koje-Mupung
- Taebaek-Miro
- Shinchang-Daejeon
- Galsan-Haemi
- Imgok-Hyeondong
- Hongsan-Gulyong
- Support road for Kunjang Industrial Complex

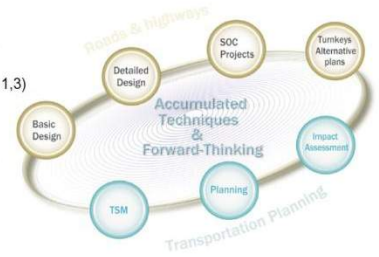
SOC Projects (PPI toll roads)

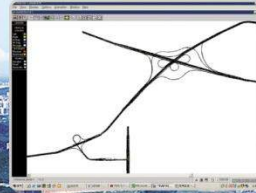
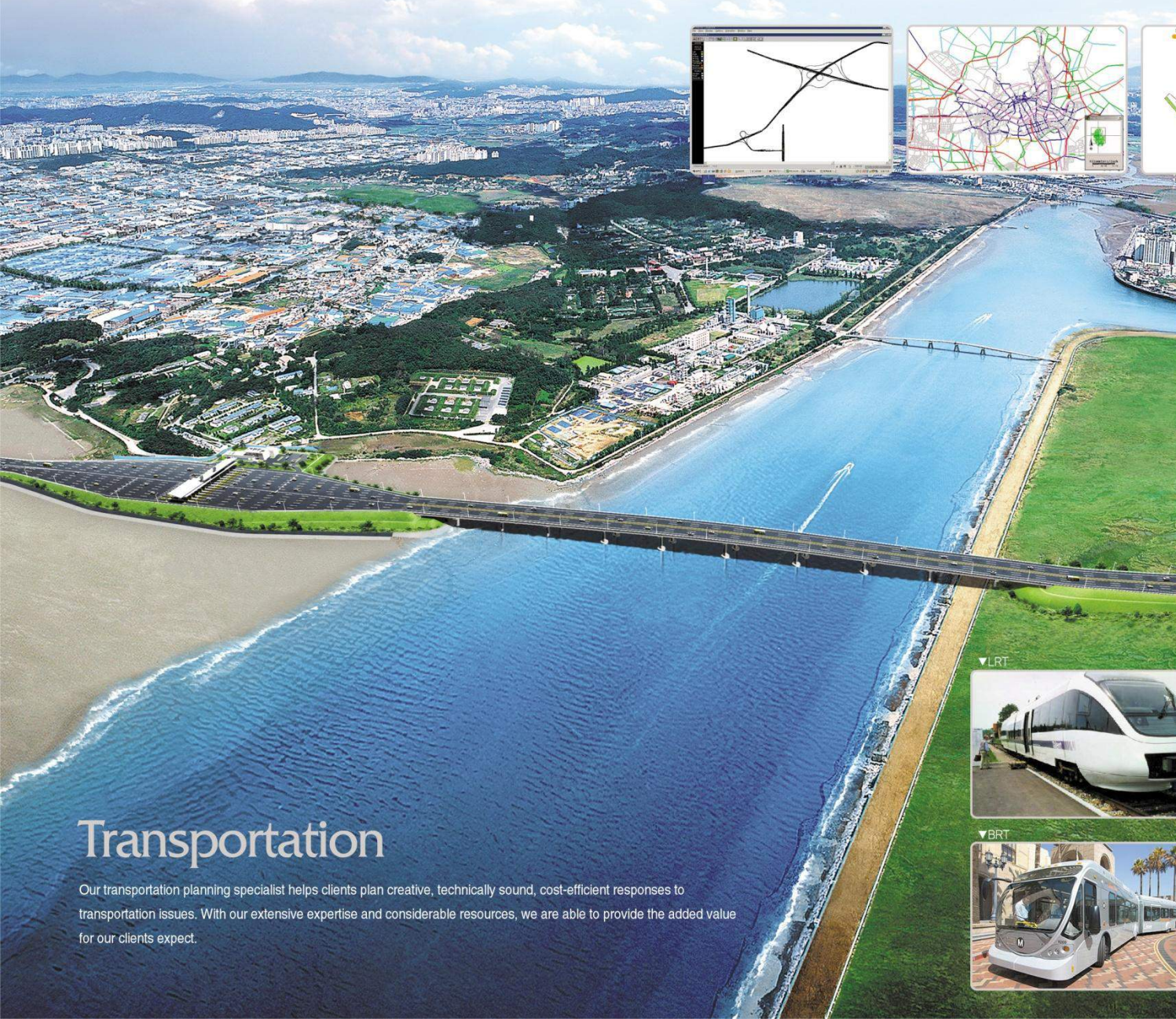
Master Planning, basic design, detailed design of

- Seosuwon-Osan-Pyungtaek Expressway
- 3rd Seoul-Inchon Expressway
- Seoul-Dongducheon Expressway
- Incheon-Gimpo Expressway
- Sihung-Whasung Expressway
- Busan-Ulsan Expressway
- Muan-Gwangju Expressway
- Yeosu-Yangpyung Expressway

Turnkeys and Alternative plans

- Incheon Second Bridge basic design project (Approach bridge design)





Transportation

Our transportation planning specialist helps clients plan creative, technically sound, cost-efficient responses to transportation issues. With our extensive expertise and considerable resources, we are able to provide the added value for our clients expect.

Projects

Transportation Impact Assessment (TIA)

- Waste incineration facility construction, Suwon City
- Chun-An Baek-Suk land development, Korea National Housing Corporation
- Jangan-Gu community center construction, Suwon City
- Iksan Police Station construction, Iksan Police
- Goesan-Yonpoong road widening project and pavement, Daejeon MOCT
- Masan alternative national expressway construction, Pusan City
- Pyungtaek-Vision land development, Pyungtaek City
- 2nd circulation expressway (East Gwangju IC~Hyodut IC) construction, Gwangju City
- Asan-Shinchang area, Korea National Housing Corporation
- Sung-Nam Police Station rehabilitation, Sung-Nam Police

Transportation Planning

- Gwang Myung City (Chulsan Station, Gwang Myung Station) transportation environmental improvement & sectional specific development basic planning, Gwang Myung City
- Gumdan 1 regional land development basic planning, detailed design, Incheon City
- Shinjang 2 regional land development basic planning, detailed design, Hanam City
- Transportation management improvement detailed design, Gwangju City
- Traffic accident protection improvement detailed design, Gwangju City
- Improvement of traffic signs and facilities detailed design, Gwangju City
- Bike trail facilities improvement planning, Ujungbu City
- Roadway general improvement planning, Seoul City



Urban Planning

Hanmac provides a full range of services in the areas of city planning, community planning, economic development and landscape architecture. We have established a national reputation as a firm that provides highly creative and technically sound assistance reflecting situational realities. Clients include both public and private entities, ranging from the individual property owner or small community to the large-scale developer, city, and county government.



Projects

- Urban planning & District planning
- District planning
- Site planning & Design
- Resort Development
- Economic development
- New Town project
- Basic and detailed design for regional development in the ICN Airport
- Landscape architecture for housing development in Daejeon
- Basic design for the public parking lot in the city of Gwangmyeong

Port Design

Hanmac has experienced a lot of projects in relation to port and offshore facilities in order to use the ocean space efficiently and systematically for many years. We provide high quality services, as realizing the standardization of high technology through the computerization and data base of the design. In addition, we have design know-how based on high qualified experts and diverse technology.

We promise to supply the best engineering services regarding port and ocean space for the convenience and satisfaction of the client.



Projects

Feasibility study and Preliminary Design

- Preliminary development plan of Container Terminal for Pusan New Port.
- Feasibility study of Dadaepo Port development.
- Feasibility study of tidal power plant for Karolim-Bay.

Breakwaters

- Detailed design of the Breakwater for Pusan New Port.
- Detailed design of the Breakwater for Ulsan New port.
- Basic and detailed design of Breakwater for Daepo fishery port.

Wharves

- Detailed design of North Container Terminal for Pusan New Port.
- Detailed design of 100,000 DWT petroleum chemical wharf at KwangYang port.
- Basic and detailed design of 60,000 DWT coal wharf, Indonesia.
- Detailed design of 5,000 DWT oil Tanker Jetty at Incheon Port.

Bridge and Structure

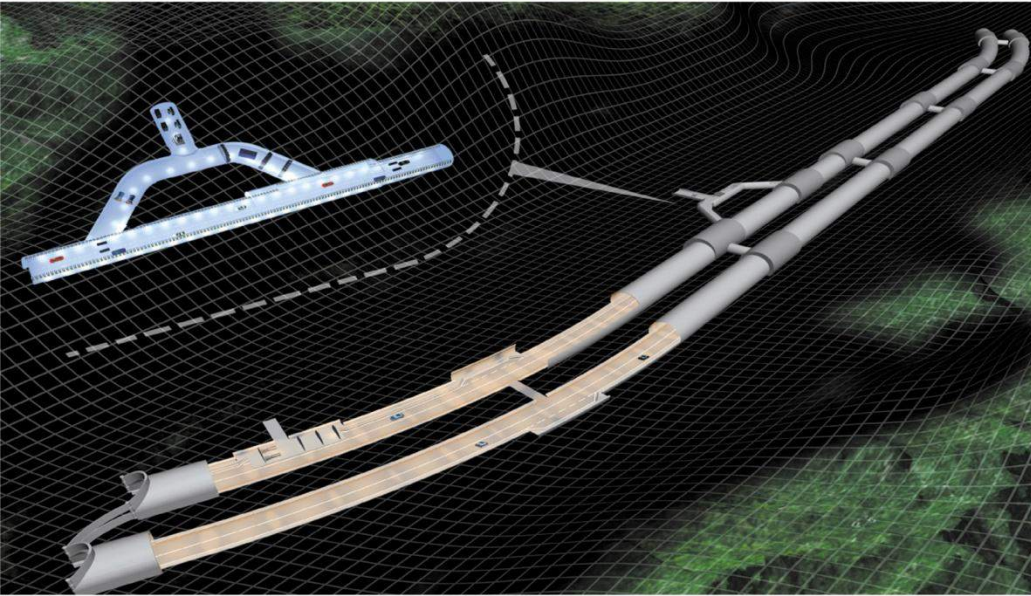
Hanmac delivers comprehensive bridge engineering services for national major transportation projects. Hanmac continues to identify innovative ideas, expands traditional practices, and develops new technical competencies through new service offerings and technology transfer. Our services can be adjusted to meet the client's specific needs.



Projects

- Structural feasibility study
- Structural analysis and capacity rating
- Structural planning and design
- Inspection and maintenance
- Cost estimation
- Retrofit and rehabilitation consulting
- R&D
- Incheon Second Bridge basic design project (Approach bridge design)
- Sonhyun-Bullo Cable Stayed Bridge
- Sokcho harbor Steel Arch Bridge





Geotechnical Engineering

At Hanmac we apply a multidisciplinary approach to tunneling and underground engineering projects. Our skills in tunnel engineering and underground technology are extensive and we are constantly improving our services by seeking innovative, cost effective solutions, to stay at the forefront of technical development and project delivery.



Projects

- Sapaesan tunnel : length 4.6km
(Seoul outer circulation Expressway)
- Jusaeng tunnel : length 1.6km
(Widening the 88Olympic Expressway project)
- Yangbuk tunnel : length 2.39km
(Gyeonju-Gampo, National highway)
- Shinpoonglyeong tunnel : length 1.76km
(Koje-Mupung, National highway)
- Gwangbi tunnel : length 0.95km
(Socheon-Seomyeon, National highway)
- Jinbuk tunnel : length 0.85km
(Jindong-Mansan, National highway)

Environmental Engineering

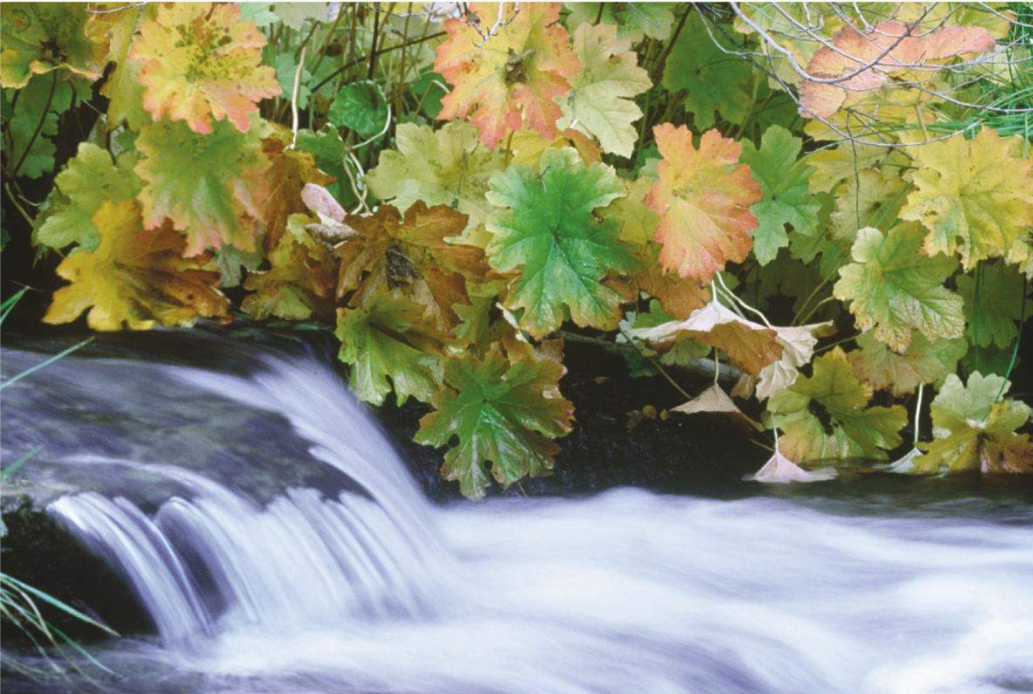
Hanmac is a provider of environmental services to industry and government. As a full-service environmental group, we provide clients with consulting, engineering, remediation, and related services. We provide rapid response and consistent service for water resource management, air quality management, environmental permitting/compliance, environmental impact assessment, geo-environmental and marine environmental engineering.



Projects

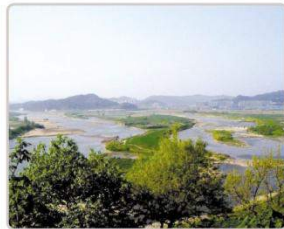
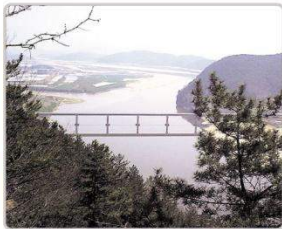
- Incineration facilities planning and design in Ulleung
- Sanitary landfill facilities planning and design in Chungju
- Environmental Impact Assessment (EIA)
 - EIA for the Expressway construction project (Mokpo-Kwangang)
 - EIA for the widening construction project (Seoul outer circulation & Jungbu Expressway)





Water Resources

Hanmac has been involved in the planning, design and implementation of water resources and irrigation projects. Much of this work involves engineering, planning, design and construction supervision measured against technical, economic, institutional and environmental criteria to ensure national and regional long-term sustainable development.



Projects

- Preliminary plan and validity examination for removing reservoir deposits in Dalbang Dam (154.4km²)
- Comprehensive plan for restoration and rehabilitation of streams (54.5km)
- River system management and improvement plan and design for the Nackdong River
- Protection equipping plan and design for the Dunpo River
- Water distribution plan and design for Kwangtan region



Construction Supervisions

Hanmac has provided various construction supervisions services, including the dispatching of supervisory technicians. Construction supervision services we offered include design assessment, final determination of construction plans, construction method management, quality control, output management, process management, and project cost estimation.



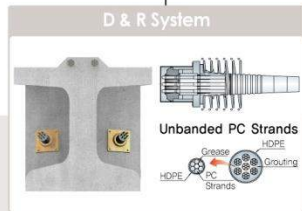
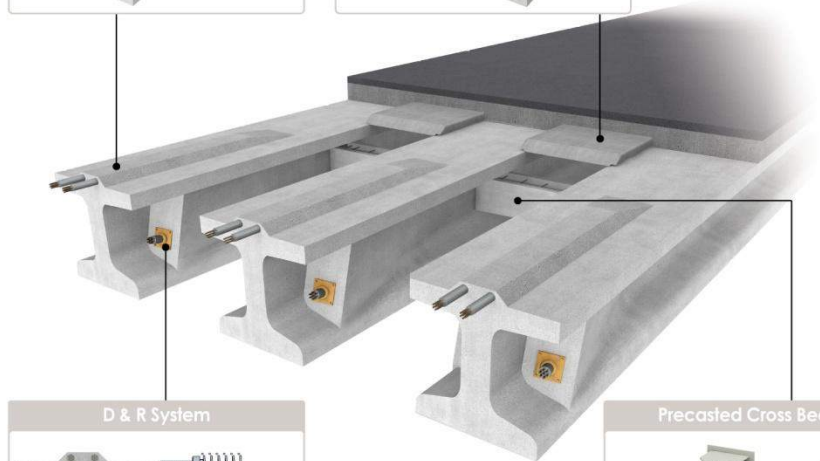
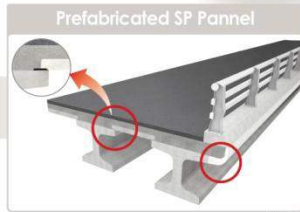
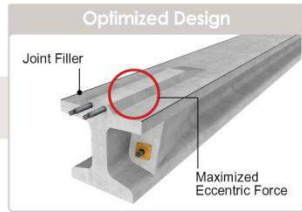
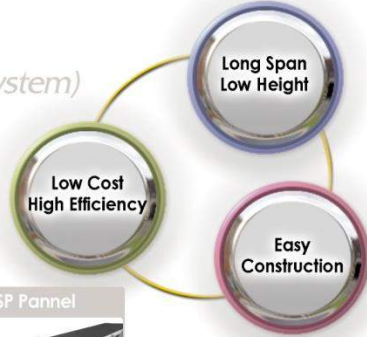
Projects

- Widening-paving work of the four-lane road (Gimhea-Saenglim)
- Widening work of four-lane road (Hyundong-Jungli)
- Construction work for Gimwha bypass
- Widening-paving work (Seosan-Jigok)
- Temporary construction work of the Sunwoo Grand Bridge
- Construction of the Hotel Castle
- Restoration project of the Sangjeok River
- Expressway construction (Seosuwon-Osan-Pyungtaek)

Reserch & Development Activities

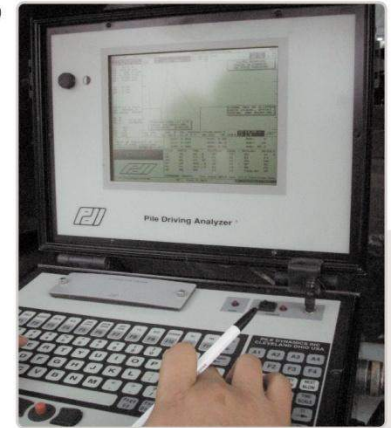
PSC DR Girder(PSC Girder Bridge with Detensioning & Retensioning System)

We developed a new concept of PSC Girder meets significant life cycle cost savings through an innovative detensioning & retensioning system.



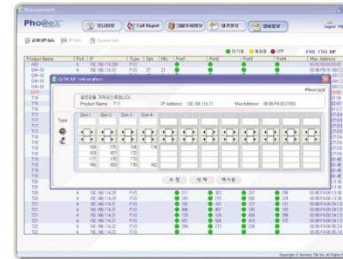
HCP(Hanmac Composite Pile)

Hanmac is developing an innovative HCP (Hanmac Composite Pile) consisted of a steel tubular pile at the upper portion and a pre-tension concrete pile at the lower portion. HCP is cost-effectiveness and suitable for the bridge foundation mobilized high bending moment at the pile head. HCP is also utilized reinforcing a concrete pile head with a steel tubular pile for a building foundation.



Information Technology

Hanmac provides various innovative telecommunication services based on the latest VoIP technologies in partnership with Telefree which is one of the largest VoIP Service Providers in Korea having its own service network throughout the world. Hanmac has been enhancing its brand power as a leading company in Internet Phone Market with various line-up of VoIP products for individuals and enterprises. Numerous user-friendly value-added features are installed on our products.



Single Unit

- PCU-Rec
- Trip Phone
- Phonex Phone
- Phonex Gateway

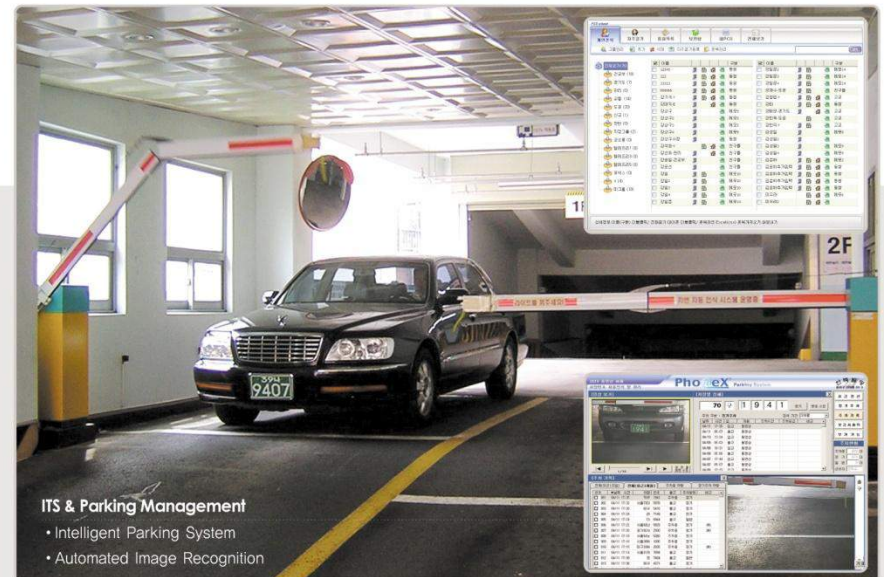
VBX System

- VBX Server
- Board & Terminal Gateway
- Fuction Phone

Tele Ference

VoIP TELCO Services

IntraNet & ERP System



ITS & Parking Management

- Intelligent Parking System
- Automated Image Recognition