MULTIDISCIPLINARY
ENGINEERING COMPANY

H I M E C

1966-2026

HIMEC

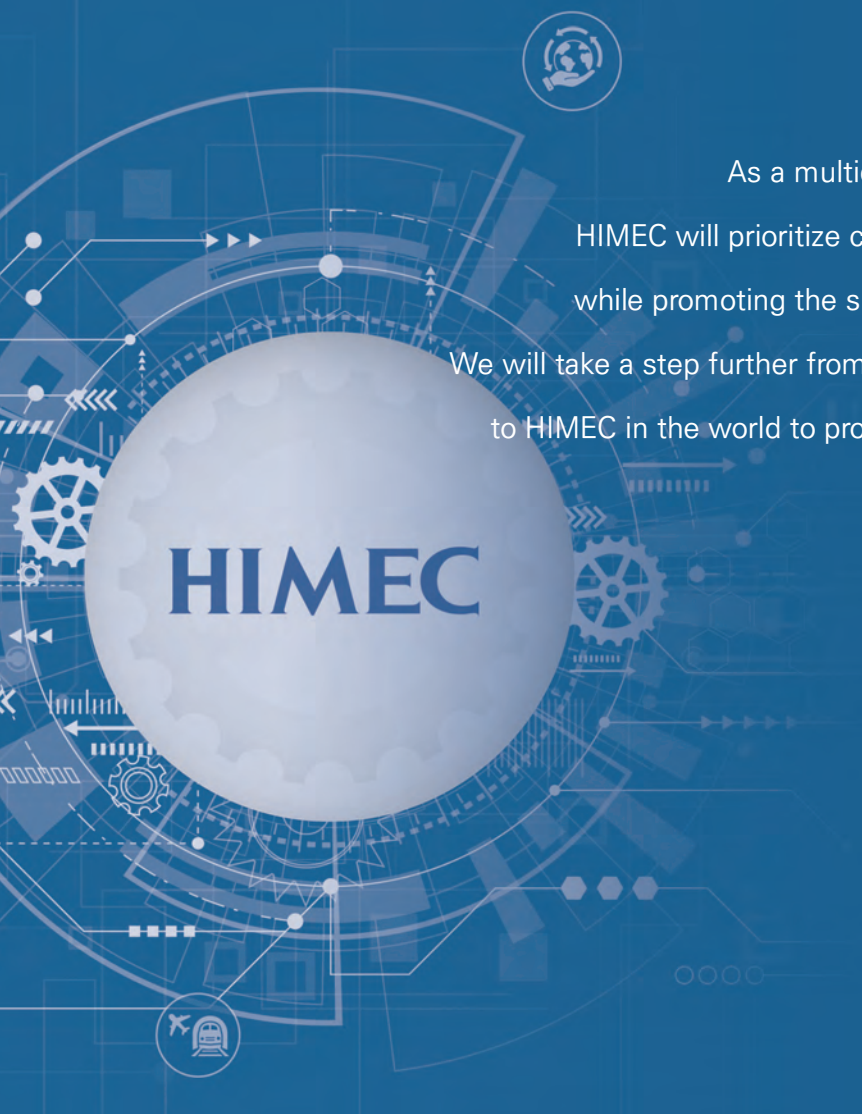
INDEX

2024.01

Endless Challenge
To become the Global No. 1
Multidisciplinary Engineering Consulting
HIMEC

Under the value of creating a pleasant living environment and efficient spaces
with love and faith as the basis
HIMEC has advanced unique technological developments in the facilities field
shared the results of continuous R&D with the industry
and walked the path of co-prosperity and coexistence.

As a multidisciplinary engineering consulting specialist
HIMEC will prioritize customer satisfaction and ESG management
while promoting the sustainable growth of the nation and society.
We will take a step further from the industry leading Korea's No.1 company
to HIMEC in the world to promote differentiated advanced technologies.



HISTORY

HIMEC
SINCE 1966

HIMEC that opened the gateway of Korea's facilities

The domestic facilities sector has been achieving gradual growth

and HIMEC is always there at the beginning and end of it all.

1960s ~ 90s

- Establishment of Hanil R&D Institute (1966)
- Registration with the ministry of science and technology for technical services (1973)
- Application of induction system
- Application of CLASS 100 clean room
- Application of VAV system
- Introduction of total heat exchanger
- Design of high-rise building
- Relocation to a new Hangang-ro Building (1978)
- Commendation by the Minister of Finance (1985, 1989)
- Application of outside air cooling and refrigeration
- Eco-friendly building design utilizing solar energy
- Design and supervision of energy-saving refrigerated warehouse
- Design of intelligent building
- Execution of energy-saving building project
- Award of the Silver Tower Industrial Service Merit (Chairman Choi Sang-hong, 1989)
- Corporate conversion Hanil MEC Co., Ltd. (1991)
- Declaration as the primary entity for engineering activities (1993)
- Establishment of an affiliated R&D institute (1993)
- Application of eco-friendly and high-efficient energy facility technology Ice thermal storage system / Low-temperature cooling system / Floor discharge air conditioning system /Double-skin air conditioning system
- Registration as a Grade 1 fire facility designer (1996)
- Registration as a Grade 1 fire facility construction supervision company (1996)
- Registration as a specialized company for facility supervision (1996)
- Establishment of the Choi Sang-hong Talent Award by SAREK (the society of air-conditioning and refrigerating engineers of Korea) (1996)
- ISO 9001 quality management system certificate (1997)
- Award by ASHRAE EXCELLENCE IN ENGINEERING (1997)
- GEF certificate (1999)

2000s ~ 2010s

- Merger with Seoul IB & Consultant Co., Ltd. (2000)
- Registration for electrical design and supervision services (2000)
- Renewal of the affiliated R&D institute (2003)
- Registration for fire facility services (specialized fire facility design and supervision) (2005)
- Registration as a specialized company for renewable energy company (2006)
- Selected as one of the "60 Engineers Who Raised Korea" (Chairman Choi Sang-hong, 2006)
- Expansion and relocation to the current Yangpyeong building (2007)
- Awarded as one of Korea's Top 100 Technologies and Leading Figures (HVAC facility and system design technology / Chairman Choi Sang-hong, 2010)
- Business expansion to Energy diagnosis/TAB/Commissioning (2010)
- Registration for construction engineering (2014)
- Business expansion to fire performance-based design and disaster prevention consulting (2015)
- Execution of eco-friendly consulting and zero-energy building design
- 50th anniversary of Hanil MEC (2016)
- Business expansion to electrical commissioning service (2018)
- Launch of HI-BEMS (2019)

2020s ~ present

- Registration as an engineering business entity (2021)
- Registration for mechanical facility performance inspection business (2021)
- Business expansion to SOC & Infrastructure (2021)
- Establishment of the Choi Sang-hong Future Talent Award by KARME (Korea Association of Registered Mechanical Engineering) (2021)
- Business expansion to global commissioning for data centers (2022)
- Business expansion to specialized PM for data centers (2022)
- Acquisition of Hwaseong Logistics Center for data center test equipment storage (2022)
- Launch of the Facility Risk Care App (2023)
- Surpassed 200 employees (2023)
- Registration for an information and communication business (2023)
- Participation certification in the Work-Life Balance Campaign, Ministry of Employment and Labor (2023)
- Hidden Champion enterprisecertification, Ministry of Employment and Labor (2023)
- Expected acquisition of Family-Friendly Company Certification, Ministry of Gender Equality and Family (2023)
- Youth-Friendly Specialized Company Certification (2024)
- Hanil M.E.C. rebrands to HIMEC (2024)
- Established DX Promotion Office
- Registration as a Railway Safety Diagnostic Institution (2024)

HIMEC by Numbers

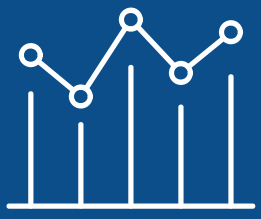
SINCE

1966

Professional Employees

250+

Projects



Domestic

4000+

Overseas

150+

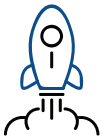
Data Center Projects

240+

Founding Philosophy

As a professional who creates a pleasant environment
for everyone based on love and trust,
as a center of the specialized field that strives
for steady technological development and progress,
we aim to be the only "one" in the world
and walk the "path of love for the country."

Strategic Direction



Technology differentiation Business advancement

Delivering high-quality services by acquiring cutting-edge technologies and enhancing professional capabilities.

Customer Satisfaction Management

Execution of projects with a high level of completeness, with customer value as the top priority.

Securing Global Competitiveness

Aiming for HIMEC to be the best in the world, enhancing international competitiveness.

Enhancement of Smart Business Capability

Maximizing organizational capacity through informatization and digitalization.

Strengthening Ownership Mindset

Ensuring the sustainable growth of HIMEC with a strong sense of ownership based on the founding philosophy.

Core Value

CHERISH & FAITH

PASSION

COMMUNICATION

INNOVATION

Buisness Registration

Engineering Business Registration Certificate

Engineering Activity Entity Registration Logbook

Construction Engineering Business Registration Certificate

Construction Engineering Business Registration Certificate

Electrical Facility Design Business Registration Certificate

Electrical Facility Inspection Business Registration Certificate

Fire Safety Equipment Sector Registration Certificate (Design Business)

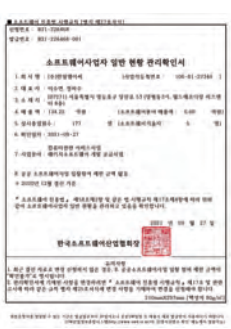
Fire Safety Equipment Sector Registration Certificate (Inspection Business)

TAB Qualification Certificate

Commissioning Qualification Certificate

Mechanical Equipment Performance Inspection

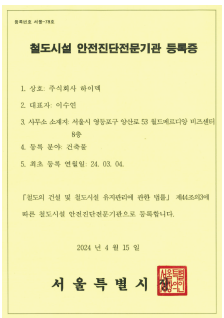
Business Registration Certificate
Corporate R&D Institute Recognition Certificate



Software Business Verification Certificate

GS Certification Acquisition

Information and Communication Business Registration Certificate



Certificate of Registration as a Railway Safety Diagnostic Institution

Patent

[Patent No. 10-2611880]
Method for creating a predictive model of environment variable comprising indoor temperature for optimal control of building energy

[Patent No. 10-2503361]
System and method for estimating thermal performance of building envelope

[Patent No. 10-2380243]
Customized Energy Management Method by Predicting Operation Performance of Building

[Patent No. 10-2298071]
Cooling System Including Dual Precooling Cooling Tower

[Patent No. 10-2259860]
Method for Designing the Renewable Energy System Reflecting Energy Consumption Characteristics of Buildings

[Patent No. 10-2249287]
System for Designing Power Supply in Data Center Buildings and Method of the Same

[Patent No. 10-2002636]
Method for Preliminary Analysis of Mechanical Design for Building Retrofit, its Program and Computer Readable Media Thereof

[Patent No. 10-2051600]
Real-time Operation Support Methods to Improve Energy Efficiency of Building HVAC Systems

[Patent No. 10-2090281]
Cooling Energy Performance Evaluation System in Data Center Building and Method of the Same

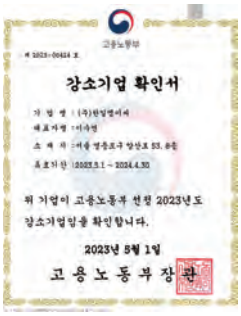
[Patent No. 10-1628784]
Evaluation Device for Energy Consumption of Data Building and Evaluation Method Using the Same

[Patent No. 10-0729801]
Floor Diffuser

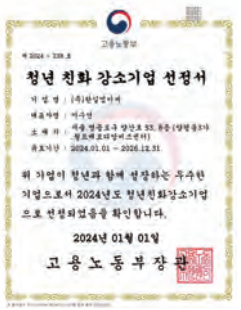
[Patent No. 10-0640146]
Pressure-difference Reducer for Elevator

[Patent No. 10-0701430]
Underfloor Air Distribution System

Certificate

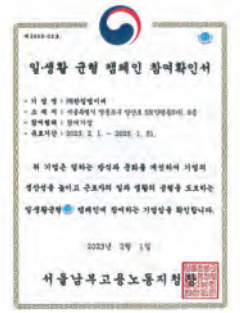


Hidden Champion Enterprise Certification



Youth-Friendly Small Giants Enterprises

Family-friendly Certified Company



Participation Certification for Work-Life Balance Campaign

BEYOND

THE 1st

AIMING FOR

THE ONLY ONE

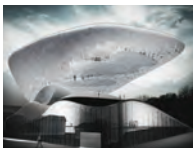
HIMEC

Beyond the Korea No.1 in construction and facility multidisciplinary engineering,

Towards the global No.1,

HIMEC's research and efforts continue.

AUSTRALIA / ANTARCTICA Flagship project




MIDDLE EAST Flagship project




AFRICA Flagship project

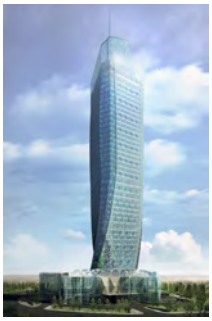




ASIA Flagship project










MULTIDISCIPLINARY
ENGINEERING ONLY ONE

HIMEC

- Integrated System Design
- Mechanical System
- Electrical & ICT System
- Fire Protection & Life Safety
- SOC & Infrastructure
- Data Center Engineering
- BIM & DX
- HI-BEMS & Operation Consulting
- Testing & Commissioning
- Electrical Commissioning Service
- Eco-friendly Consulting
- Remodeling & Retrofit
- PM & CM
- R & D

Integrated System Design

Design, construction, maintenance, remodeling

Multidisciplinary Engineering services for the entire building Life Cycle

LIFE CYCLE	Masterplan	Design	Construction	Operation & Management	Remodeling
WORK SCOPE	Feasibility Study	Masterplan	Schematic Design	Detailed Design	Electrical Commissioning Service
					T.A.B
					Performance Verification Simulation (CFD/Energy/Illumination/Noise & Vibration...)
	PM/CM/Construction Supervision				
	Initial Commissioning		Commissioning		Retro Commissioning

WORK SCOPE	Diagnosis & Consulting	Diagnosis
	Performance Improvement, D.D Indoor Environment Evaluation	Master Plan
	BEMS Consulting	Remodeling Design
		T.A.B Performance Verification

Integrated design covering MEPF

(Mechanical, Electrical & ICT, Fire Protection & Life Safety)

Korea Trade Center Building

FKI Tower

IKEA Gwangmyeong Store

Sangam Data Center(ICN10)

Electrical System

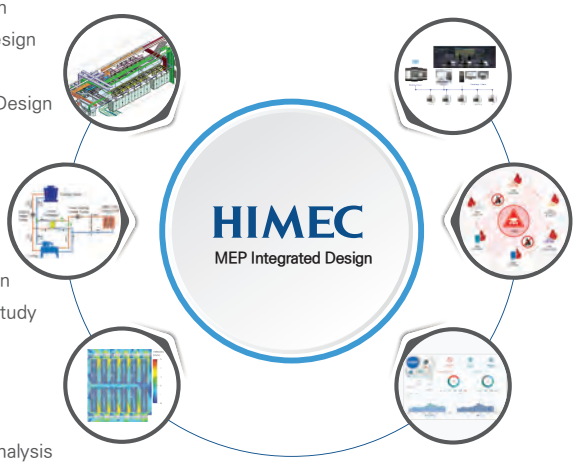
- Incoming Utility Power & Substation Design
- Power Distribution & Mechanical Power Design
- Lighting Design and Daylighting Study
- Lightning Protection and Earthing System Design

HVAC system

- HVAC System Design
- Hydronic Piping System Design
- Radiant Heating and Cooling System Design
- Natural Ventilation and Hybrid Ventilation Study
- Economizer System Design

Performance Simulation

- CFD / Energy Modeling /Piping Network Analysis
- Arc Flash/Discrimination Study
- Lighting Simulation
- Fire and Evacuation Simulation



Information, Telecom & Security System

- Telecommunication Infrastructure Cabling and LAN System Design
- Public Address/Communication and AV System Design
- CATV, Parking Control, and Integrated Security Design

Fire Protection & Plumbing System

- Water-Based Fire Suppression and Special Fire Suppression System Design
- Disaster Prevention Consulting and Performance-Based Design
- Sanitation System Design

Control System

- Integrated Control System Design
- Automatic Control Sequence Planning
- BEMS Consulting

Mechanical System

Mechanical System Engineering

Best HVAC, Plumbing

HVAC & PLUMBING MECHANICAL SYSTEM DESIGN

Engineering Consulting
- Masterplan consulting
- Infrastructure consulting
- Concept design consulting
- Building energy consulting
- LCC consulting
- Noise and vibration consulting
- Apply latest global codes and regulations

Mechanical Design
- HVAC System
- Plumbing System
- High-rise building design
- Sustainable building system design
- Zero Energy Building Design
- Remodeling consulting

Sound & Vibration
- Sound & Vibration Design
- Sound Simulation
- Due Diligence

Process Management
- Optimal design process
- Risk management at each design stage
- Providing best results through systematic management

Seismic Design
- Mechanical design based o seismic resistance grade
- Mechanical design optimized for seismic resistance special grade
- Seismic design for non-structural elements
- Documentation of non-structural element

Integrated System Design
- Specialized system for smoke control with HVAC combined
- Leading integrated system design
- Optimal interface control
- BIM Management

Automatic Controls & BEMS
- Automatic control system design
- BEMS(Building Energy Management System) solution

Simulation and verification
- Building energy simulation & analysis
- ECO2
- CFD (Star CCM+ & 6sigma)
- Outdoor environment consulting
- Water hammer simulation
- PipeFlow

Certification
- Green Building Certification

High-rise building

Design considering various factors such as vertical zoning, stack effect, HVAC systems, outdoor air intake methods, drainage system, etc.


Parc 1


FKI Tower


GBC


GS Gangnam Tower


Busan Lotte Tower


Acro Seoul Forest

Office Facilities

System application considering comfort, energy saving, easier maintenance, etc.


Amorepacific New HQ


Hana Dream Town Group Headquarters


Parnas Tower


KB Kookmin Bank HQ


Daishin Securities Office Building (Myeongdong Office District)

R&D Facilities
Design implementing safe research facilities and reflecting the future research environment


SK Bioscience R&D center


LG Science Park Magok


KOLON One & Only Tower


KOLON Institute of Technology


Toray korea R&D center

Medical Facilities
Mechanical system design optimized for each zone's use and characteristics


Asan Medical Center Expansion


Hallym University Dongtan Sacred Heart Hospital


National Center for Mental Health

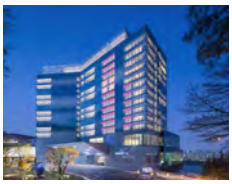

Osiria Meditown

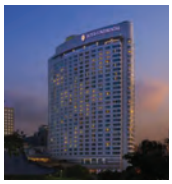

Yeouido St. Mary's Hospital

Hotels & Accommodations
Management efficiency and user-focused mechanical system design


Grand Hyatt Incheon


Grand Inter-Continental Seoul Parnas


Walkerhill Seoul


InterContinental Seoul COEX


Dong Dae Moon J.W.Marriott


Marriott Hotel Jeju

Public Buildings
Active energy saving design through passive system, waste heat recovery, and renewable energy sources system


Government Complex Sejong 2-1


Nuritkum Square


Central Post Office


Bank of Korea Gyeonggi Headquarters


Supreme Court Building

Commercial Facilities
Design for easier maintenance


Garak Market modernization project

COEX Mall

Culture and Exhibition
Specialized design for temperature, humidity and noise


LG Art Center Seoul

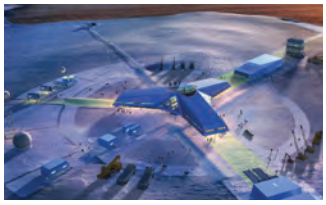

Sejong Arts Center

Sports / Religious Facilities / Special Buildings
Special building design for energy saving using the surrounding natural environment and optimal operation


Incheon Asian Games Main Stadium


The Shrine of Our Lady of the Rosary of Namyang


APEC Summit Hall(Nurimaru)


Antarctica 2nd Base

Electrical & ICT System

Total electrical and ICT system design solution
that prioritizes customer satisfaction through
professional manpower and systematic systems.

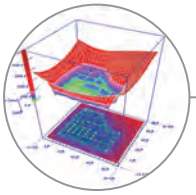
ELECTRICAL & ICT SYSTEM ENGINEERING

Electrical System Design
- Incoming utility power and substation design
- Power distribution and mechanical power system
- Lighting and small power system
- Lightning protection and earthing system

ICT System Design
- Telecommunication infrastructure cabling and LAN system
- CATV system
- Parking control system

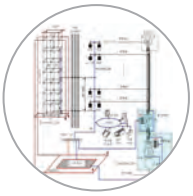
Power Quality Analysis
- Arc Flash
- Discrimination Study
- Harmonic Analysis
- Short Circuit Calculation

Special Design
- Integrated security consulting
- Special lighting and sound system consulting
- BIM design (3D Modeling)

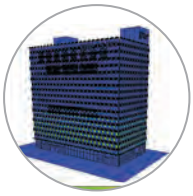


Power System Analysis

- Short Circuit Study
- Load Flow Analysis
- Insulation Coordination Study
- Motor Starting Analysis
- Harmonic Study
- Arc Flash Analysis
- Protective Device Coordination Study



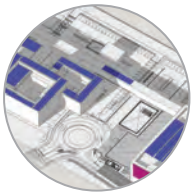
Grounding &
Lightning Protection System



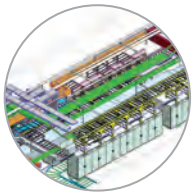
Special Lighting System

Integrated Security Solution

Audio & Video System



Photovoltaic System



Building Information Modeling

Amorepacific
New Office Building

FKI Tower

Seoul Office of Education Building

Gangneung Ice Hockey Stadium

Angola Kinaxxi Complex

Fire Protection & Life Safety

We, the specialist of fire engineering,

make your DREAM of fire prevention and life safety

D DESIGN

- Fire protection system of Domestic and Overseas projects
- Building and Industrial facilities

R RESEARCH

- Collaboration of national R&D projects
- Interpretation of Codes and Standards

E ENGINEERING

- Performance-based design
- Application of the latest technologies
- Technical negotiation with permitting authorities

A ANALYSIS

- Fire impact assessment
- Disaster impact assessment

M MODELING

- Fire Simulation
- Evacuation Simulation
- Simulation of Smoke Control

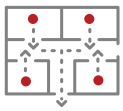
Consulting & Management

3rd Party Review

Hazardous Material Consulting

Fire Alarm Matrix

International Code & Standard Consulting

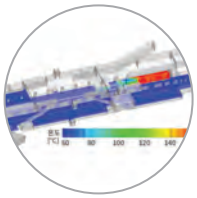


Damage Mitigation Plan

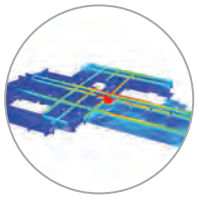
PBD Implementation Report

Analysis & Development

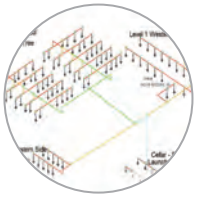
Fire & Evacuation Modeling



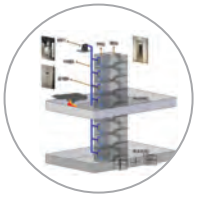
Quantitative Risk Assessment



Parkinglot Air flow Modeling



Hydro-Calculation



Pressurization system Modeling

Hot Smoke Test

IKEA Gwangmyeong Store

Kakao Data Center

Yongsan International Building

COEX Mall

SOC & Infrastructure

The best airport design technology proven through
Incheon International Airport Passenger Terminals 1 and 2,
and Differentiated engineering services
in the railway and tunnel fields.

Airport

- Passenger terminal, Auxiliary buildings and Utility pipings design
- Project management
- TAB & Comissioning
- Performance testing and remodeling design

Rail & Tunnels

- Railway and road tunnel design
- Railway station design
- Railway project management

SOC & Infrastructure MULTIDISCIPLINARY ENGINEERING

Airport Passenger Terminal

Railway Station Terminal

Port Passenger Terminal

Power Plant

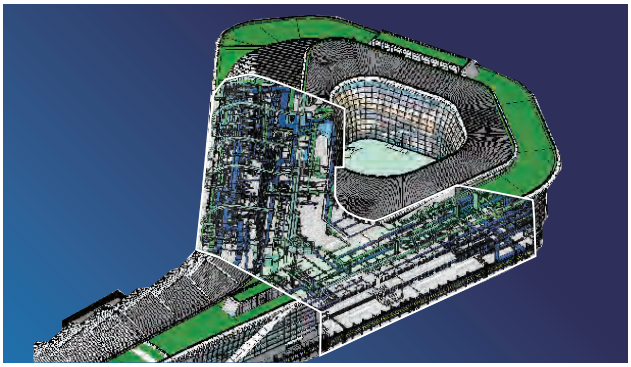
Pipe Utility Conduit

Wastewater Reclamation and Reusing System

Airport design with the best technology

Incheon International Airport Terminal 1
The first large-scale HUB Airport Passenger Terminal in Korea

Incheon International Airport Terminal 2
The largest Airport Passenger Terminal in Korea



Incheon International Airport Terminal 2
3D Design work utilizing BIM

Incheon International Airport Terminal 2 Traffic Center
Space connecting the airport passenger terminal, airport railroad, and access road

Railway and road tunnel design

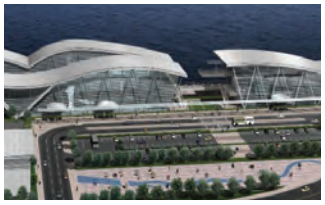
Establishment of overall system to enhance high-speed railway technology through double-tracking to resolving bottlenecks in the Pyeongtaek-Osong section

Pyeongtaek-Osong Double-tracking Zone 1 Construction
Total tunnel length extension: L=46.95km
[Contract Section: 10km153]
[Integrated power distribution substation and signal equipment room]

Pyeongtaek-Osong Double-tracking Zone 2 Construction
Total tunnel length extension: L=46.95km
[Contract Section: 9km262]

International Port Passenger Terminal Design

Busan Port International Passenger Terminal



Gunsan International Ferry Passenger Terminal

Jeju Ferry Passenger Terminal

Mokpo Ferry Passenger Terminal

Data Center Engineering

The largest data center experiences in Korea

Only One Multidisciplinary Engineering Service Provider in Korea

The best in data center engineering service – HIMEC

Customer's needs and requirements analysis

Design

Domestic	Mechanical Electrical & ICT	BIM
International	Fire Protection & Life Safety	

Design stage

R & D
- Sustainability consulting
- CFD Simulation(6 sigma)
- LEED Consultation
- Energy Simulation
- BEMS

Construction Project Management
- CM
- PM

Construction stage

Total Commissioning
- T.A.B
- Testing & Commissioning
- Electrical Commissioning Service

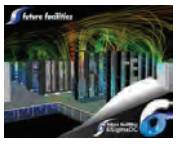
Operation stage

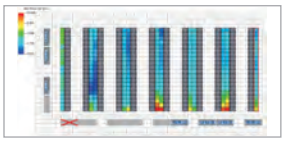
Operation and Maintenance
- Performance monitoring
- Operation management

High-efficiency data center design utilizing software

6SIGMA DCX

The only engineering company in local that provides consulting using 6 Sigma





Specialized consulting for high efficiency cooling system in server rooms

- First application of free cooling system using cooling tower in Korea
- Enhancement of cooling efficiency through on-site measurements in server room airflow (KT Mokdong IDC)
- First design and commissioning of direct outdoor air cooling system in Korea (NHN Data Center, 'GAK' Chuncheon)
- First design and validation of a built-up CRAH system for IDCs with outdoor air cooling system in Korea (LG CNS)
- Design of free cooling system using ACC (SK C&C Pangyo Data Center)
- First design of indirect outdoor air cooling system in Korea (Samsung SDS Data Center)

Application of latest global codes and standards for data center design

ANSI/BICSI | TIA STANDARD | ASHRAE | CIBSE GUIDE | ANSI/ASHRAE STANDARD

Application of energy saving technologies for data centers

· Direct outdoor air cooling
- –Cooling server rooms by introducing outdoor air
- –40% annual energy savings

· Indirect outdoor air cooling
- –Less affected by outdoor air quality
- –Less restrictions on location and climate

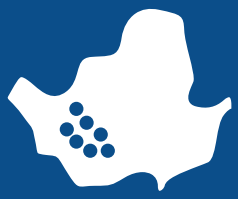
· Liquid cooling system
- –Cooling system for high-density racks
- –Chilled water supply to local cooling units

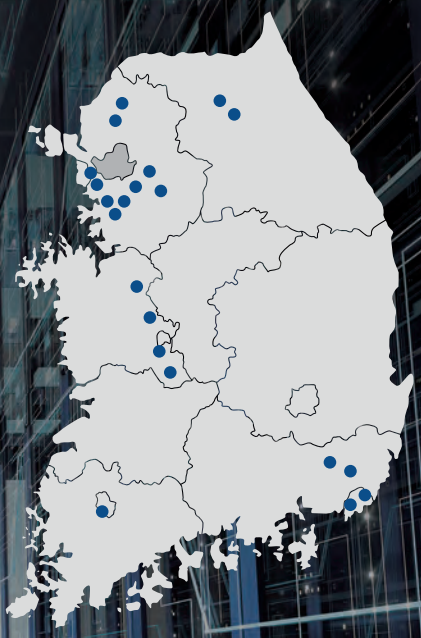
· Free cooling system with cooling tower
- –approximately 7–30% annual energy savings

Major Experiences – Domestic

Major Projects in the Seoul Metropolitan City

- Sangam Data Center(ICN10)
- Guro Gaebong Data Center
- Guro Hangdong Data Center
- Kakao Data Center
- Samsung SDS Data Center
- KB Kookmin Bank IT Center
- KT Mokdong IDC
- Gasan Data Center





- NHN Data Center 'GAK' Chuncheon
- NHN Data Center 'GAK' Sejong
- Songdo IBM Data Center
- Bundang Hostway Data Center Remodeling
- SK Broadband Bundang IDC
- SK C&C Pangyo Data Center
- Samsung Electronics S-Project (HPE)
- Shinsegae I&C Data Center
- National Environmental Satellite Center
- Gongju Government Integrated Data Center
- KEPCO ICT Daejeon Center Total Commissioning
- Korea Bioinformation Center
- Gwangju Data Center Construction Supervision
- Daegu Bank (DGB Innovation Center)
- BNK Financial Group IT Center (Project Management, Total Commissioning)
- LG CNS Busan IDC Built-Up Cooling Design

NHN Data Center 'GAK' Chuncheon
World's First LEED Platinum Grade / International Eco-Friendly Building Certification

Songdo IBM Data Center

KT Mokdong IDC

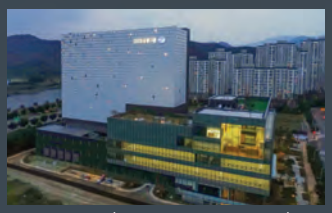
Bundang Hostway Data Center Remodeling

SK C&C Pangyo Data Center

Samsung SDS Data Center

Korea Bioinformation Center

Shinsegae I&C Data Center

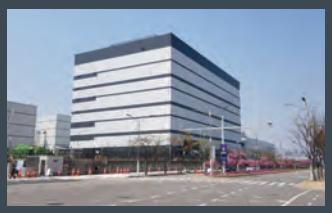


Daegu Bank (DGB Innovation Center)

BNK Financial Group IT Center

KB Kookmin Bank IT Center

Kakao Data Center



Samsung Electronics S-Project (HPE)

Sangam Data Center (ICN10)

NHN Data Center 'GAK' Sejong

AESPA Data Center (Bupyeong)

Gasan Data Center

BIM & DX

BIM & DIGITAL TRANSFORMATION

A BIM multidisciplinary engineering solution that provides optimized design

based on integrated design capabilities in the MEP and fire safety fields

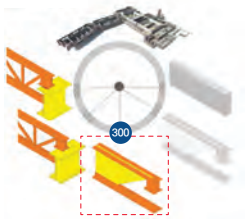
Design Process

Construction Plan and Review	Construction Permission	Basic Design	Final Design
· Design data build plan –Discussion of working scope by construction type –BIM Modeling environment setup –Family production plan	· Family production and major space review –Family production considering project characteristics –Layout of MEP–related facility equipment	· 3D Modeling–1 by construction type –Progress in MEP Floor Plan Modeling –Equipment schedule work –Constructability review using 3D Design review solutions	· 3D Modeling–2 by construction type / Outcome –Progress in MEP Enlarged Floor Plan Modeling –Writing drawings for delivery –Extraction of views and sheet setting for 2D Drawing

High Accuracy & No Change Drawings through BIM Modeling

Perform BIM Modeling at LOD 300 Leve

· Writing of drawings at LOD (Level of Development Specification) 300 Level for reflecting BIM Modeling to actual construction and accuracy improvement in drawings



Revit MEP

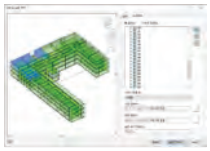
construction

Building HVAC Load Calculation Analysis

· Utilization of built design data and BIM data with mutual complementarity

· Improved productivity through automated design

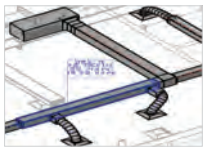
· Utilization of Diverse Information on Configuration



Detail Improvement in Duct and Piping Design

· Implementation of optimized design

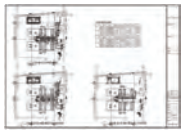
· Optimization of design management



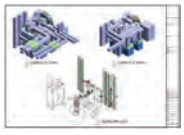
Utilization of BIM Tools for 2D and 3D View

· BIM execution from DD100%

–Utilizing BIM from the initial stages of design to minimize design errors and achieve high–quality design documentation through coordination with other fields such as architecture and structure



BIM 2D Floor Plan



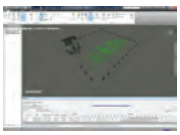
BIM 3D VIEW

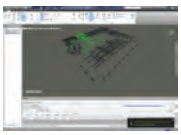
Execution of 4D(Process) Management Program

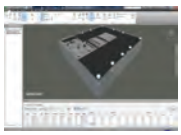
· Utilization of design information built through modeling by datafication of each construction process

· Prediction of material quantity supply

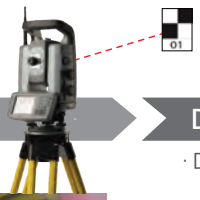
· Enhancement of precise construction through virtual Pre–construction







3D Laser Scanning WorkFlow



Site Survey

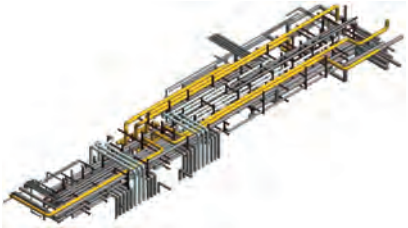
· Confirmation of the target through a site survey

Data Collection

· 3D scanning of the target

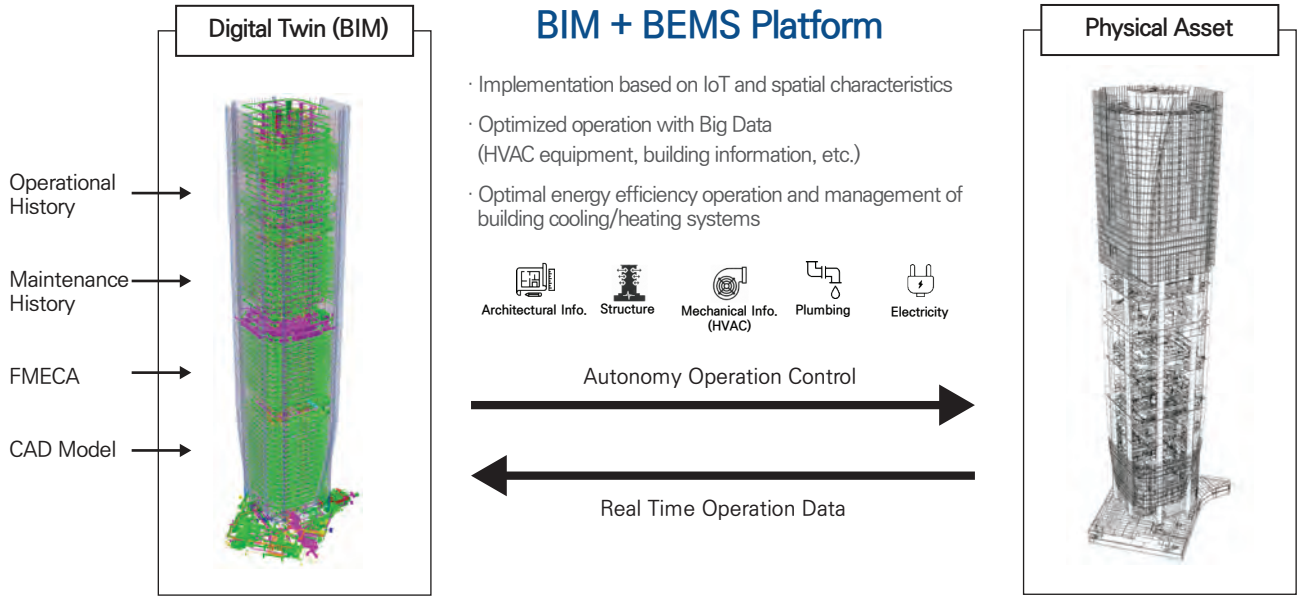
Data Processing

· Data extraction and 3D modeling

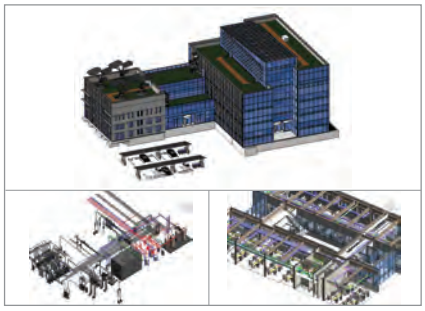


DX DIGITAL TRANSFORMATION

BIM + BEMS Maintenance Platform



Key Projects Awarded BIM AWARDS



POSCO Green Energy Town

Nambu Power Office Building

POSCO Global R&D Center

HI-BEMS & Operational Consulting

HI-BEMS, a building energy optimization management system provides basic functions in accordance with KS F 1800 standards including prediction of building energy usage and load support function for energy target levels and remodeling (patented).

Grade 1

GOOD Software

GS(Good Software) Certification

Demand and Individual Equipment Optimization

- Extend equipment lifespan and reduce costs through efficient operation.
- Achieve usage reduction through optimization by energy analysis.
- Determine energy-saving priorities.

Establish a Stable Operating Environment

- Improve comfortability through indoor environment and HVAC performance management.
- Optimize building equipment and equipment operation.
- Improve facility maintenance through equipment performance analysis.

Integrated Management and Energy Management Support

- Create synergy through the establishment of an integrated energy management system.
- Realize energy management from a building operation perspective.
- Improve building productivity.

Real-time Reliable Reporting

- Set management goals based on data analysis, including key management targets and energy usage status.
- Verify energy usage and establish standards.
- Provide standardized reports.

Operational Consulting

Identify equipment conditions and operational issues through analysis of building energy usage and equipment performance to achieve energy savings and building efficiency.

Operation

Analysis of energy usage and operational issues.

Equipment

Measurement of key equipment and system analysis.

Energy Saving Item

Identification of energy-saving items.

BEMS & BAS

Support improvement activities for BEMS and BAS.

Key Projects

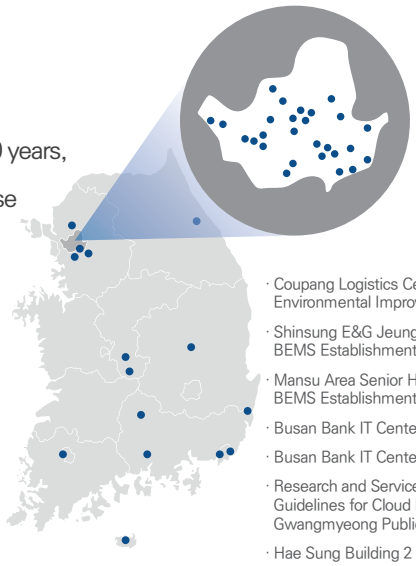
We have completed more than 50 similar projects over the past 10 years, including diagnosis, and possess know-how and technical expertise through these projects.

Shinsung E&G Jeungpyeong Plant

Busan Bank IT Center

Center Point Myeongdong Complex Building

Daegu Data Center



- Coupang Logistics Center (Goyang/Dongtan) Environmental Improvement Consulting
- Shinsung E&G Jeungpyeong Plant IDC Testbed BEMS Establishment
- Mansu Area Senior Health and Culture Center BEMS Establishment
- Busan Bank IT Center BEMS Establishment
- Busan Bank IT Center Operational Consulting
- Research and Service for Development of Roadmap and Guidelines for Cloud BEMS Establishment of Gwangmyeong Public Buildings
- Hae Sung Building 2 Aging Diagnosis
- Sewoon Area 4 BEMS Grade 1 Preliminary Certification Consulting
- Center Point Myeongdong Complex Facility BEMS Establishment
- SKT BEMS Consulting (Analysis and Design for Energy Analysis Demonstration and Modeling Development)
- Daegu Data Center BEMS Consulting

Testing & Commissioning

Building performance assessment and improvement solutions for building comfortability, value enhancement, energy savings, and high-efficiency operation

Design Team
- Electrical
- Mechanical
- Automatic Control
- Fire Protection

Commissioning Team

Headquarters Team	Field Team
· Review drawings and results · Document control · Progress and quality control · Administrative support	· On-site data gathering · On-site work control · On-site situation analysis · Commissioning team management

PM group
- Share on-site progress and issues
- Share on-site situation and action results
- Propose alternative measures of action

Commissioning technical support

Design Division
- Approximately 60 years of design know-how in mechanical, electrical, communication, and fire protection design
- A wide range of facility design achievements

Testing & Commissioning
- Energy performance diagnostics
- Drawing review
- Witness
- TAB/Commissioning

R&D Division
- Research and development work
- CFD simulation
- PUE analysis
- Energy consulting

Construction Management Division
- Integrated team of mechanical, electrical, ICT and fire protection
- In-house professional and senior engineers
- Construction supervision of data centers
- On-site construction management of the entire construction process

Commissioning

On-site installation verification → Operation and functional performance tests → Training of O&M personnel → Submission of performance verification report


Gwangju AI Data Center, NHN Cloud


NHN Data Center 'GAK' Sejong


KB Kookmin Bank IT Center


Seoul Asan Hospital Expansion Project


Incheon Airport Terminal 2

TAB (Testing, Adjusting and Balancing)

System review → Performance measurement of HVAC equipment → Adjustment and balancing → Report submission


Samsung Electronics Suwon Plant


MANDO NEXTM TAB


Celltrion Plant 1


Samsung Biologics Plant 2 Expansion


Incheon Airport Terminal 2 Front Facilities

Aging and Energy Diagnosis

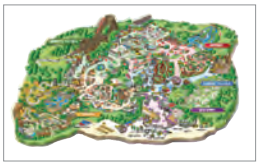
Energy aging and performance diagnosis → Equipment lifespan prediction → Improvement plan establishment


The Shilla Hotel Pipe Diagnosis and Renovation Consulting


Downtown Airport Terminal Aging Diagnosis


Samsung Electronics R-LINE Fab Utility Pipe Diagnosis


Terminal 1 Aging Facility Diagnosis


Everland HVAC System energy audit

Mechanical Equipment Performance Inspection

System review → Performance inspection planning → Performance inspection execution → Inspection report and retrofit planning


LG U+ Sangam Performance Diagnosis


LG U+ Sangam Performance Diagnosis


LG Electronics Seocho R&D Campus


NHN Data Center 'GAK' Chuncheon


Connect ONE

Electrical Commissioning Service

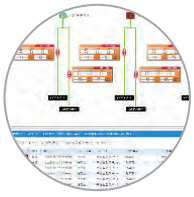
Optimal solution for ensuring the reliability of power facilities

It is a solution that prevents losses in advance by verifying the reliability, availability, and stability of the infrastructure under the actual conditions that may occur during actual operation to key electrical facilities, such as transformers, generators, and UPS.

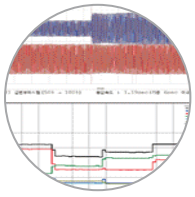
Load Bank Testing of Equipments

Acceptance Testing

Integrated System Testing

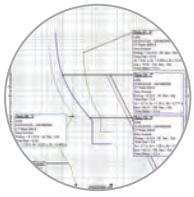


EPMS Verification



Power Quality Analysis

Heat Load Testing



Relay Coordination

Own Load Banks and Testing Equipment

Load Bank (Available for Rent)		
R – Load Bank	L – Load Bank	Rack Type Load Bank
		
400kW 250kW 3P 380V 60Hz Y Phase 14Step	300kVAR 250kVAR 3P 380V 60Hz	18kW 6kW x 3Set 1P2w/3P4w 380/220V 60Hz

FLUKE 190-204 (Scope Meter)	FLUKE 435 II (Power Quality Meter)	FLUKE 1750 (3 Phase Power Recorder)	FLUKE 376FC (Clamp Meter)	KYORITSU 2433R (Leakage Current Tester)	KEW5050SE (Leakage Current Tester)
					
LUTRON VB-8201HA (Thermo-hygrometer)	FLUKE IR566 (Thermal Meter)	FLUKE TI-450 (Thermal Imaging Scanner)	FLUKE BT510 (Battery Analyzer)	FLUKE TIX580 (Thermal Imaging Scanner)	8031F (Phase Rotation Tester)
					
FLUKE 1507 (Insulation Resistance Meter)	FLUKE-87-5 (Digital Multimeter)	TES-52A (Sound Level Meter)	CMC 356 (Protection Relay Tester)	CBA1000 (Circuit Breaker Analyzer)	STS 5000 (Primary Injection Tester)
					

*Inquire about load bank rental: 02-6340-3163

*Annual calibration and report available

Key Projects with the Largest Number of Performance Records in Korea

KDB Industrial Bank Data Center

KB Kookmin Bank IT Center

Sangam Data Center (ICN10)

KEPCO ICT Daejeon Center

Eco-friendly Consulting

Eco-friendly consulting and design engineering

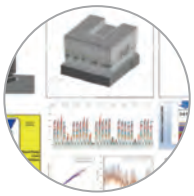
that considers a sustainable future

by reducing environmental load and saving energy in buildings.

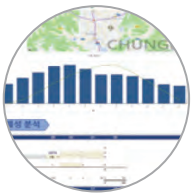
Numerical Prediction and Verification Using Computational Simulation

We propose solutions for low-energy, eco-friendly design techniques through indoor environmental analysis using simulations.

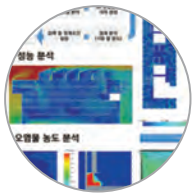
Energy Analysis → **CFD Analysis** → **Piping Network Analysis**



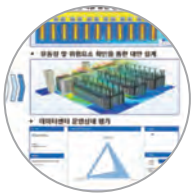
Energy plus



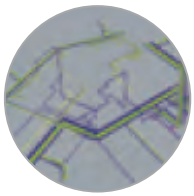
RETScreen



STAR-CCM+



6SIGMA DCX



PIPENET
Standard Module

PIPENET
Transient Module

Key Projects Focused on Low-Energy Systems

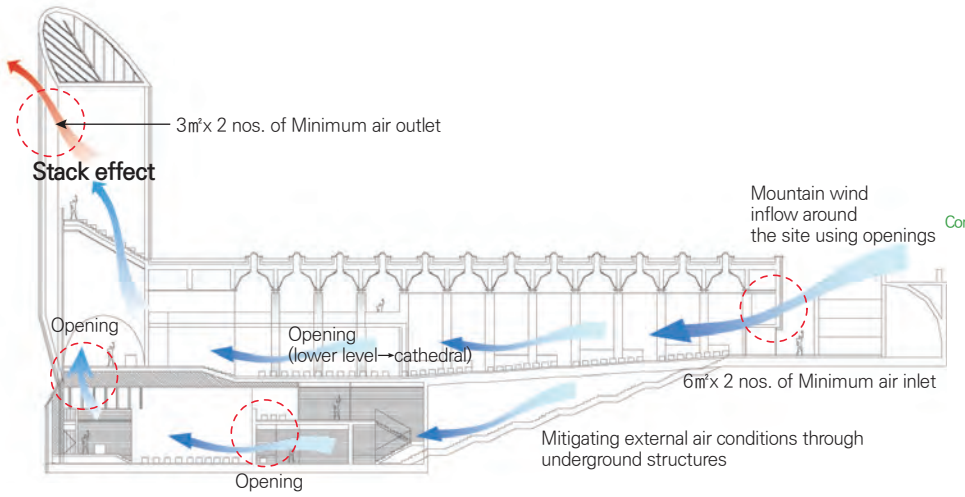
The Church of Our Lady of the Rosary of Namyang

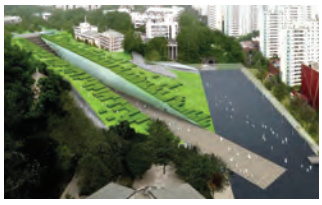
Active natural ventilation plan:
Buoyancy Ventilation + Gio-Thermal Air Tunnel

- Formation of airflow by buoyancy due to the building's characteristics that induce the stack effect
- Proposal of a thermal tunnel for ground-source heat exchange in the underground

The Church of Our Lady of the Rosary of Namyang
Proposal to reflect eco-friendly design through continuous communication and coordination with the architect

KOLON E+ Green Home
(Passive House Certification in Germany)
Radiant cooling directly utilizing ground-source heat





Ewha Womans University Campus Center (ECC)
Concrete thermal storage type radiant heating and cooling

National Institute of Ecology
Radiant heating curtain wall

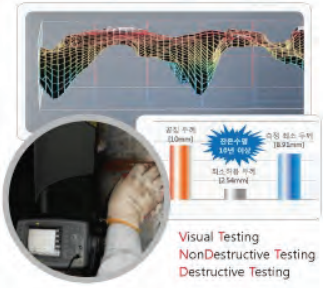
Remodeling & Retrofit

Remodeling & Retrofit that actively respond to carbon neutrality agreements by improving building quality and energy efficiency extending the entire life cycle of the building.

Due Diligence / Aging Diagnosis

· Due Diligence
Collect requirements from the client and investigate the status of existing facilities

· Diagnosis of old facilities
Evaluate the aging of the facilities, determine the need for renovation and remodeling, set the scope of renovation, and propose alternatives

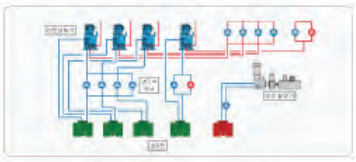


Remodeling & Retrofit Design

· Planning/Conceptual Design
Develop improvement plans based on diagnostic results

· Detailed Design
Specification of plan considering economic feasibility, constructability, and environmental feasibility

· Design Stage Performance Verification
CFD, energy analysis, power reliability review, etc.



Construction Stage Engineering

· CA
Review site drawings and documents prepared by the constructor, support and approval of equipment procurement, and report risks during construction.

· Commissioning
Verify compliance with the design intent at each construction stage, conduct factory inspections, functional test, and comprehensive interlock test to verify performance.

Key Projects

COEX Mall Remodeling


The Shilla Hotel Remodeling


63 Building Electrical and Communication Renovation / Duty-Free Store Renewal


Yeouido St. Mary's Hospital Remodeling


KAIST Natural Science Building Remodeling


Grand InterContinental Parnas Seoul Remodeling


Lotte Department Store Gangnam Branch Renewal

PM & CM

PROJECT MANAGEMENT & CONSTRUCTION MANAGEMENT

Implementing PM/CM real name policy

Enhancing Customer Value based on Technology and Principle

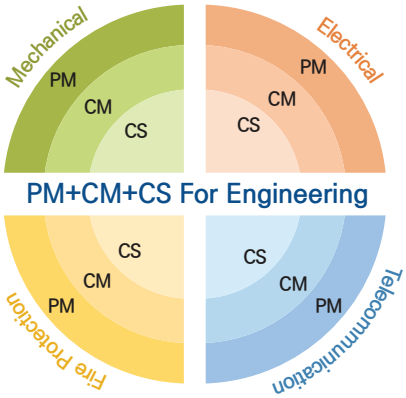
Differentiated PM & CM

Ensuring PM/CM Work Transparency

Realizing the PM/CM real name system that fulfills responsibilities and obligations by ensuring work transparency.

PM/CM Integrated Coordinator Organization

Providing synergy effects through an integrated organization for four areas: mechanical, electrical, communication, and fire protection.



Application of PM/CM Techniques

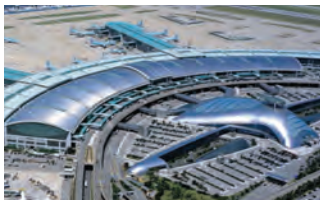
Adhering to the role of an ordering party's representative as a coordinator between project managers, business managers, designers, and constructors.

Value Engineering

Centralized management of VE concepts by involving experts during the design and construction phases.

Airport (Construction Management)

Incheon International Airport Auxiliary Buildings Phases 3 & 4



Incheon International Airport Passenger Terminal

High-rise building and Complex Facilities

COEX Mall Remodeling

Lotte World Tower, 123 stories (Construction Management)

Subway

Seoul Subway Line 9 Phase 3 District 920

Religious Facilities

The Church of Our Lady of the Rosary of Namyang

Wonchon Baptist Church (IM CENTER)

Residential Complexes

Gwacheon Jugong Complex 1 Reconstruction

Songdo District F20-1 Block Residential Complex

Accommodations

Vista Walkerhill Hotel Seoul

Daemyung Hotel & Resort Auxiliary Building, Sono Felice Building

Logistics Centers

Changwon Logistics Center

Osan Wondong Logistics Center

Data Centers

BNK Financial Group IT Center

GDC Data Center

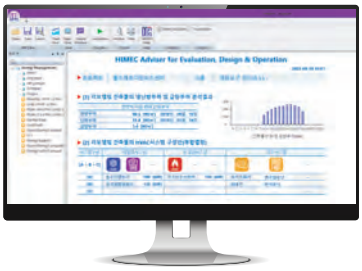
R & D RESEARCH & DEVELOPMENT

The Hanil R&D Institute, with a macro perspective that opens up a sustainable future,
dreams of a tomorrow of mutual growth
with the accumulated knowledge and expertise in eco-friendly, low-carbon building design.

Design Support Technology Development

Provides short-term quantitative analysis results
on the energy performance level and improvement effect of buildings

Building HVAC energy evaluation technology



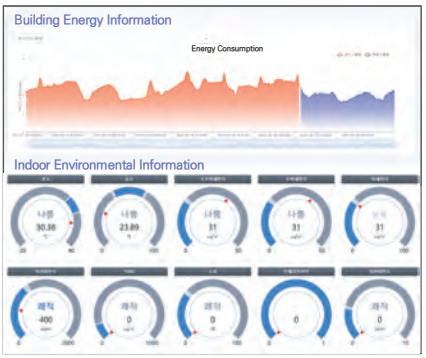
Renewable energy system design support technology

Data center HVAC power system design support technology

Building Operation Management Support Technology Development

Decision support for energy-efficient operation of HVAC systems during the operational phase

Building energy management support technology



Facility design, construction, and operation risk management support technology

Development of facility risk management application "Facility Risk Care"

Facility Risk Care App is an application
that can contribute to reducing risks in the field of facilities during the design, construction, operation,
and maintenance stages by sharing the latest technical data.

Download on the App Store

GET IT ON Google Play

Coexistent Cooperation Technology Development

Shorten the product development period, reduce investment costs, create and expand markets

Item discovery → Planning → Design → R&D Prototype development → BM development → R&D Prototype development → Evaluation advancement → Market application → Upgrade

HIMEC (The Hanil R&D Institute) continues its research for a better future development.

Originated from the R&D Institute,
HIMEC, as a leading company that leads industry growth through in-house research and development,
undertakes various corporate research projects, including government projects,
and demonstrates its achievements through activities like patent registration
and software development in accordance with the development of new technologies.

Performance of National R&D Projects (2013-2022)

Duration	Project	Supporting Organization
2022-2026	Development of digital audit of building energy and generative design for green remodeling activation	Korea Agency for Infrastructure Technology Advancement
2021-2022	Program for energy and cost analysis to support decision-making in green retrofits of non-residential buildings	Korea Agency for Infrastructure Technology Advancement
2020-2024	Innovative Energy Remodeling Total Technologies(M&V, Design, Package Solutions, and Testing & Verifications Technologies) for the Aging Public Buildings	Korea Energy Technology Evaluation and Planning
2019-2022	Development of design and construction technologies to optimize energy consumption of a small-scale building	Korea Agency for Infrastructure Technology Advancement
2018-2021	Development of Integrated Energy Solutions and Infra Module for PUE 1.3x Energy Efficient Data Center	Korea Energy Technology Evaluation and Planning
2017-2019	Convergence Technology Development for Zero-energy Town Energy Cloud Implement	Korea Energy Technology Evaluation and Planning
2015-2019	Optimal Technology Development for Energy Efficiency Maximization of Public Buildings	Korea Energy Technology Evaluation and Planning
2014-2018	An Empirical Study on the Application Promotion Technologies of Organic Waste Resources in Housing Complexes	Korea Agency for Infrastructure Technology Advancement
2011-2016	Research on Green Buildings based on Market Demands	Korea Agency for Infrastructure Technology Advancement

Performance of Corporate Research Projects (2013-2022)

Duration	Project	Supporting Organization
2015-2016	Feasibility study on the introduction of external air cooling for district cooling	Korea District Heating Corporation
2014	Efficiency improvement and new technology introduction for LG CNS data center	LG CNS
2014	Documentation of economic analysis and design technology of chilled beam system using passive dehumidification rotor	Fläkt Korea
2013-2014	Air conditioning system design and test	Kongju National University
2013-2014	Technology development of a model with floor air supply system	Samhwa Ace
2013	Evaluation of energy savings in the primary cooling system according to the cooling water temperature	Seongji Air Conditioning Technology
2013	Development of eco-friendly air conditioning system for Song-san-ri Ancient Tombs in Gongju	Kongju National University
2011-2012	Research on Green Buildings based on Market Demands	Yonsei University
2011-2016	Energy manpower training project	Kookmin University
2011-2013	Development of radiant heating curtain wall system	Samsung C&T

Patent Registration Performance

Category	Patent Name
[Patent No. 10-2611880]	Method for creating a predictive model of environment variable comprising indoor temperature for optimal control of building energy
[Patent No. 10-2503361]	System and method for estimating thermal performance of building envelope
[Patent No. 10-2380243]	Customized energy management method by predicting operation performance of building
[Patent No. 10-2298071]	Cooling System Including Dual Precooling Cooling Tower
[Patent No. 10-2259860]	Method for Designing the Renewable Energy System Reflecting Energy Consumption Characteristics of Buildings
[Patent No. 10-2249287]	System for Designing Power Supply in Data Center Buildings and Method of the Same
[Patent No. 10-2002636]	Method for preliminary analysis of mechanical design for building retrofit, its program and computer readable media thereof
[Patent No. 10-2051600]	Real-time Operation Support Methods to Improve Energy Efficiency of Building HVAC Systems
[Patent No. 10-2090281]	Cooling energy performance evaluation system in data center building and method of the same
[Patent No. 10-1628784]	Evaluation device for energy consumption of data building and evaluation method using the same
[Patent No. 10-0729801]	Floor diffuser
[Patent No. 10-0640146]	Pressure-difference Reducer for Elevator
[Patent No. 10-0701430]	Underfloor air distribution system

Software Registration Performance

Copyright Registration Number	Software Name
C-2022-054420	Facility design and construction risk management support program
C-2022-054419	HANIL EMS (Energy Management System web program)
C-2022-055651	Green Retrofit Program v2.0
C-2022-045601	HiBEARS (Hanil MEC's Building Energy Audits-diagnosis and Retrofit Solutions)
C-2021-048453	Green Retrofit Program
C-2021-027431	Data center HVAC power performance evaluation program
C-2020-043877	MESDTDC (Data center HVAC power system design support tool)
C-2020-006942	HI-BEMS Ver.1.0
C-2018-006942	Building HVAC energy evaluation program

1966-2026

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